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ABSTRACT

This study focused on two issues: (1) the effects of college characteristics on the social status of student occupational choices; and (2) an analysis of the characteristics of colleges which affect the degree to which students choose occupations which are academic in character. The study is based on data gathered from 946 students in 99 colleges who returned mail questionnaires both in their freshman and senior years. The findings indicated that: (1) college quality indicators or college size and complexity have neither positive nor negative effect on the overall social status of the occupations selected by students, when individual background factors and freshman occupational choices are taken into account; (2) college quality indicators show no systematic effects on shifting student occupational choices toward either academic or non-academic high status professions; and (3) large schools tend to shift student occupational choice toward high-status professional occupational choices and away from high-status academic occupations, while small schools have just the opposite effect. (AF)

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THE EFFECTS OF COLLEGE QUALITY AND SIZE ON STUDENT OCCUPATIONAL CHOICE

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PREFACE

The line of work leading to the present study goes back for a number of years. As a teacher at Columbia College, Columbia University, I was struck by the strong pressures which even very able students seemed to experience because of the extraordinary standards of comparison set by the presence of such a highly qualified student body. Two students--Stanley Raffel and Lawrence Kessler--aided greatly in the development of this idea by examining empirical data on the problem in their senior theses. The Bureau of Applied Research at Columbia University, through Allen Barton, its director, also contributed by providing helpful financial support and encouragement.

The present empirical study was developed while I was working with two colleagues now at Northeastern University--William Bowers and David Kamens. Working closely together, first with the help of the Bureau of Applied Social Research at Columbia University, and then through the Russell B. Stearns Study at Northeastern, we made a number of attempts to design and obtain support for a major contextual study of the ways college characteristics affect the decisions of individual students. We were not able to obtain regular financial support, but finally decided to go ahead anyway. We took advantage of data on a rather large sample of American college students which William Bowers had gathered (under Office of Education sponsorship) at the Bureau of Applied Social Research. Using the facilities of the Stearns Study at Northeastern University, we prepared and mailed a follow-up questionnaire to the students who had been freshmen at the time of the earlier study. The returned data were processed and organized at the Stearns Study, and were made available to me at Stanford University.

It should be clear from the above paragraph that without my intellectual and practical collaboration with William Bowers and David Kamens, this study would not have been possible. I am grateful for their advice and help.

This study was actually conducted at Stanford University's Laboratory for Social Research and its Center for Research and Development in Teaching, supported by the U. S. Office of Education. I am particularly indebted to Patrick McDonnell, and in the later stages of the data analysis to Anne Graham for technical help in working with these data. Both of them have given freely a great deal of time to setting up the data for computer analysis, and to carrying out such analyses. These are tasks which have been made more frustrating, more difficult, and more time-consuming because computation facilities at Stanford were not adequately developed to deal with problems of the kind of social research reported here. The completion of this study, therefore, owes a great deal to the dedicated and skilled assistance of these people. In the same areas, technical assistance was also ably and willingly provided by Sally Main and Marc Bernstein.

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CHAPTER I: INTRODUCTION

Summary. This study is designed to show how two basic characteristics of colleges--their "quality" or resources and their size or organizational complexity--affect the occupational choices of students when relevant characteristics of the individual students are held constant. Two aspects of occupational choices are involved: the degree to which students choose occupations which are higher or lower in overall social status, and the degree to which they choose occupations (among those of the highest status) which are academic in character, rather than nonacademic professions. The earlier research literature suggests two inconsistent lines of reasoning about the effects of school quality on both the social status of student occupational choices and their academic character. (1) The educational and social resources of high-quality schools operate to make any given student more likely to aspire to higher status occupations and to more academic ones. Such schools are able to provide better teachers and more of them, more stimulating peers, better facilities, and the social prestige which a student can count on to open doors for him after graduation. These characteristics involve the student more in the life of the college, and lead him both to aspire to positions of the greatest significance (or status) and to identify with the values of the academic world. (2) Higher-quality schools provide higher levels of competition for any given student by surrounding him with more able and more highly motivated peers, and faculty members who set very high standards. This competitive pressure makes a given student less likely to receive good grades and much encouragement, and to be able to maintain his self-esteem as a student. Thus, students of given ability who are in higher quality schools should tend to end up with lower aspirations and less confidence in their ability to pursue distinctively academic occupations than other students.

The research literature also suggests similarly inconsistent argument about the effects of school size. Larger schools offer students more formal opportunities, but smaller ones may offer more opportunities to identify with individual teachers. It is often suggested that the features of smaller colleges are especially likely to lead students toward academic occupations, because students are able to relate more closely to their teachers.

In order to examine these hypotheses, this study presents data on the occupational choice changes of 946 students in 99 American colleges. These students were part of a larger mail questionnaire survey of students in the spring of 1963. At that time, they were college freshmen. In 1966--when many of them were college seniors--another mail questionnaire was sent to them. The 946 students on whom we have information are those who returned both questionnaires. Because the response rate obtainable in such a situation was inevitably low, the sample may be unrepresentative in many ways. The most important of these is that students who dropped out of college or transferred to another college between 1963 and 1966 are greatly underrepresented because it was difficult to keep track of their addresses. We have corrected for this underrepresentation by

analyzing the data both in their present form and also with the dropouts and transfers in the sample weighted more heavily to bring this part of the sample up to its appropriate size--roughly 50 per cent of the sample. No significant differences between the two analyses are found.

College characteristics are measured by aggregating information on individual students and also by using institutional information reported in a number of sources. Data from several of these sources have been collected for computer analysis as a College Characteristics Data Bank by researchers at the Bureau of Applied Social Research at Columbia University (Nash, 1966). A factor analysis of college characteristics taken from these various sources shows that those attributes which indicate school quality or resources and those that indicate school size or organizational complexity may be seen as two distinct (and unrelated) factors. Thus the analysis of the effects on student occupational choices of school quality and school size may take place independently.

The analysis of college effects on student occupational choices proceeds with relevant individual characteristics of students held constant. Preeminently this includes the students' occupational choices as freshmen, of course. But also included are sex (female students are less likely to retain or shift to aspirations of high occupational status, and are almost completely unlikely to plan at any point on entering the high-status nonacademic professions) and academic ability (measured by combining information on the student's high school grades with his verbal aptitude test score). Students of higher ability are more likely than others to retain or develop aspirations to occupations of high social status. Interestingly enough, the social class background of the students shows almost no relation to their shifts in occupational choice during college when their ability level is held constant. Correspondingly, this variable is not held constant in the analysis of college effects.

The basic contextual findings of the study are negative. None of the indicators of college quality which were examined showed effects--either positive or negative--on the status of the occupational choices of the students. Those apparent effects of a few quality indicators on the degree to which students choose academic occupations appear to reflect the operation of school size, not quality.

College size or complexity also appears to have no effect on the social status of the occupations chosen by the students. However, college size does show an effect on the degree to which students choose academic occupations. Students in large schools are less likely than others to choose academic occupations, and more likely to choose nonacademic professions (such as law, medicine, or engineering) than others. And students in small schools are thus more likely to choose academic occupations. It is hypothesized that this effect results from the degree to which small schools bring a student into close contact with the academic career (through his teachers, who are academics), and at the same time isolate him from the formal programs, curricula, entrance requirements, and so on, which might lead him into other professions.

It is possible that the absence of effects of school quality on occupational choice--particularly on the social status of occupational choices--may result from two basic features of American society. (1) A relatively low level of cultural definition of occupations as primarily organized around the stratification system. Individual students may be choosing occupations primarily in terms of their interests and tastes, and only secondarily in terms of the stratificational location of the occupations in the class structure. And the society may be organizing access to occupations in these terms sufficiently to make such orientations possible for individual students to maintain. (2) The stratification system of the educational order--rankings of schools by prestige and quality, and within them, rankings of students by grades and performance--may be seen by students and others as only loosely related to the stratification system of the "real" or adult society and its occupational structure. That is, success or failure in school may not be taken as the main basis on which to formulate occupational plans.

Either of these two lines of reasoning--or both--may explain the failure of the present study to show either positive or negative relations between school quality and occupational choice status. Some evidence supporting the first line of reasoning is presented. It is shown that college grades are less strongly related than might be expected, to shifts in occupational choice. Students with poor grades do not overwhelmingly shift away from high-status occupational plans, and students with very good records do not show strong shifts toward high-status occupational choices.

The Problem. This report presents some empirical data on a problem that has been of considerable interest from a number of points of view--do different colleges tend to send essentially similar students into different occupations? Social scientists have been interested in this question because differences in occupational allocation among colleges might indicate something about how socializing, or "people-processing" organizations work. (For general review of this literature, see Jacob, 1957, and especially Feldman and Newcomb, 1969). They have also been interested in the ways colleges might be related to the stratification system. Do the great differences among colleges in selectivity and resources contribute to mobility by adding more kinds of opportunity, or do they make the stratification system more rigid by intensifying the class-related differences among the students they selectively admit? From the point of view of those administering the system of higher education, the occupational effects of college social structures are obviously of great importance, since the justification of many structural arrangements in colleges depends primarily on the effects they have on students in such central areas as occupational choice.

Interest in college effects on occupational choices centers on two important questions, both of which are considered empirically in this report. First, what is the relation between a college's quality (or resources) and its effects on the social status of the occupational intentions of its students? Do high-quality schools increase the inclinations of their students to choose high-status or professional occupations? (Spaeth, 1968a, b; 1970). Or conversely do they lower the aspirations of their students by providing high standards and highly competitive surroundings (Davis, 1966; Meyer, 1965)? Second, what is the relation between a college's size or quality and its tendency to recruit students for distinctively intellectual or academic occupations? Do high-quality schools reinforce such aspirations by providing training and role models, or do they diminish them with high competitive standards (Meyer, 1965; Raffel, 1969)? Do small schools provide the kind of close contact with teachers which reinforces academic aspirations, as is suggested by the major early studies of Knapp and his associates (1952, 1953)?

Research in this field has been faced with a number of methodological problems which have made it very difficult to arrive at clear evidence on college effects (Barton, 1959). The simplest and yet most troublesome of these is the need to study college outputs holding constant the input characteristics which students bring with them. Otherwise any findings that colleges vary in the occupations chosen by their students might reflect differences in the kinds of students they select. Some of the most interesting studies in this area have had difficulty with this problem, simply because it requires studying the same students over four years. Knapp et al. (1952, 1953), had no way of holding constant the kinds of students their colleges selected, and could only examine the career lines of graduates. The studies based on NORC data (Davis 1966; Spaeth 1968a,b; 1970) rely on a large sample drawn at the end of their senior year in college. The crucial data on the occupational choices the students arrived at college with, are obtained only through retrospective questions, which involve massive errors. These studies also lose track of all those students who dropped out of their colleges, and since colleges differentially produce dropouts (Kamens, 1968; Astin 1968), a large class of potential college effects are completely left out. Some studies which do follow the same students through college are able to obtain information only on very selected groups of students, as with the National Merit Scholarship Corporation studies by Astin (1962,1963) and Thistlethwaite (1962,1963).

A second methodological problem has been the difficulty of conceptualizing and measuring characteristics of colleges. The simple attempt to see how much colleges vary in the final occupational choices of students who arrived with similar occupational choices does not tell us which kinds of college characteristics are involved in the effects. But it is also true that attempts simply to try out a number of college characteristics which happen to be available, or which arise from a factor analysis of questionnaire data from a number of schools, does not provide much reason to hypothesize or expect to find interesting college effects (Astin, 1962, 1963, 1968).

The present study examines changes in college student occupational choices by comparing data taken from the same sample of students at two points in time. Nine hundred forty-six students in 99 American colleges, who returned mail questionnaires both in their freshman and their senior years, constituted the sample. A good many kinds of data are available on the colleges--both measures obtained by aggregating information on the individual students, and institutional reports of the college itself. Enough information is available on relevant characteristics of the individual students themselves to make it possible to examine the effects of college characteristics on relatively similar students.

Our report is organized in the following way. In the remainder of this introductory section, we consider the empirical and theoretical background of the present study--the college effects literature and the theoretical problems which are the starting point of the present study.

The next main section of the report (Chapter II) presents the data with which this analysis is concerned. Four main topics are involved: (a) a description of the sample, and the methods of data collection, and potential inaccuracies or biases in the data; (b) a description of the occupational choice classifications which provide the basic dependent variables being examined, along with data on the overall ways in which student occupational choices change through college; (c) a description of the basic individual attributes which affect changes in occupational choice during college, and which must be held constant in an examination of college effects; and (d) a description and analysis of the characteristics of colleges the effects of which we are examining.

Chapter III presents the results of the study. It is organized around three problems: (a) the effects of college quality, along with college size and complexity, on the social status of the occupations students choose. (b) The effects of college quality and size on the degree to which students choose high-status academic as opposed to nonacademic professions. (c) Some arguments and data on the low level of empirical relationship between academic success and failure and students' choices relevant to the occupational stratification system.

This report then concludes (Chapter IV) with a short summary of our major findings.

The Focus of the Study. The present study focusses on two issues involved in the discussions of college effects on occupational choice.

(1) What are the effects of college characteristics, in particular, college quality on the social status of student occupational choices? Colleges and universities can be distinguished along a continuum of amount of resources*

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*One could imagine defining school quality in terms of the changes which are induced in students--an idea similar to defining the quality of a firm by its profits per unit produced. Or it would be possible to conceive of school quality in terms of changes in students per unit of investment, which would be analogous to the firm's profit/investment ratio. But since neither researchers nor college administrators know what effects any given college produces, because of the methodological problems noted above, among others, college quality is ordinarily defined in terms of inputs or structural characteristics, not outputs. This is fundamentally irrational, in Weber's sense, and would be comparable to defining the quality of a business firm in terms of its investments in capital, labor, and technology, without considering its profits.

Some have more money, better students, more highly trained faculty members, more social and intellectual prestige, more advanced academic programs, and so on. The sociological literature on schools suggests two basic ways in which these characteristics might affect the social level of the goals of students. (a) It seems reasonable to believe that students in high-quality colleges would be more likely to move to (or retain) high-status occupational choices. They are, presumably, better educated; they are surrounded by higher-status peers who themselves have high aspirations, and who provide a climate of high aspirations; they are brought into contact with more prestigious and more likely to look favorably on their aspirations. This line of reasoning is best developed in the literature on the effects of high schools on college intentions, in which these various arguments are used to explain why high schools with high social-status students are more likely to create intentions to attend college among students who themselves are of the same status and ability. Studies, beginning with Wilson (1959) have not gone very far in explaining which among the various resources of high-status high schools are actually operating (see the review by Meyer, 1970), although there is some agreement that the influence of high-status peers is most important. At the college level, some studies have found positive effects on occupational intentions of variables which seem to indicate school quality (Spaeth, 1968a, b,; 1970), while others have not (Astin, 1968; Knapp et al., 1962, 1963). (b) Arguments exactly opposite to the one above have emerged in discussions of college effects. In a paper entitled "The Campus as a Frog Pond," Davis (1966) shows some evidence that students' aspirations are negatively affected by the quality of the college they attend (see also Werts, 1968; Meyer, 1965; & Raffel, 1969). Students in high-quality colleges face competitive standards so much higher than students in other colleges, that relative to their abilities and original aspirations, their final occupational goals may actually be adversely affected. Their peers have higher than ordinary ability, their teachers have high standards and are likely to be preoccupied with graduate training research, and other professional activities. The net consequence may be that a student with any given level of ability is less likely to obtain good grades, faculty encouragement, and peer respect in a high-quality college than in a lesser school.

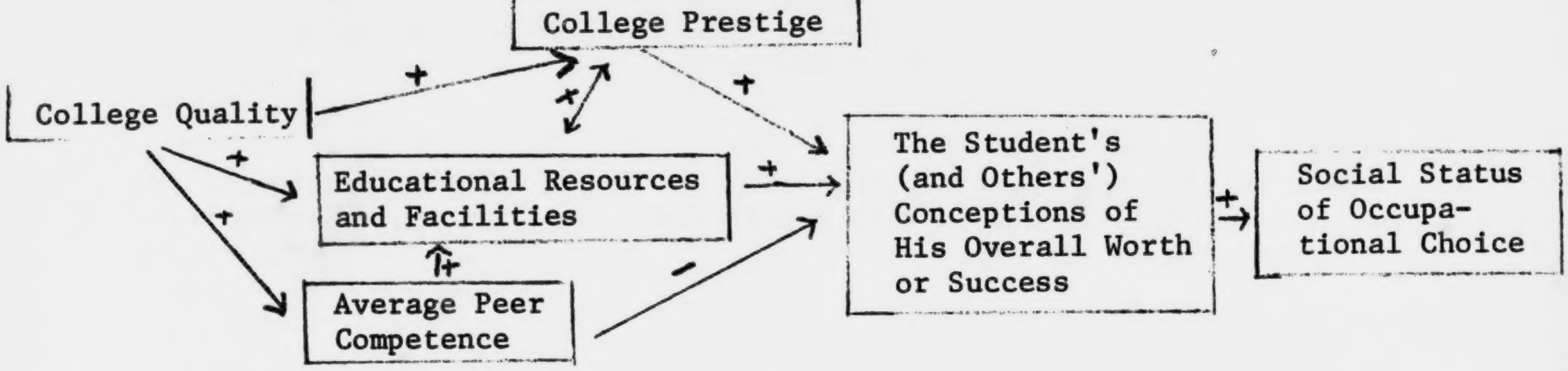
The present study aims, not only at discovering which of the two opposite effects discussed above can actually be found, but at the analysis of both of them. That is, apart from the overall effects of indicators of school quality on occupational intentions, can we discover some properties of high-quality schools which support high occupational intentions, and other components of quality which seem to depress them? Supportive effects might include those related to prestige (see Meyer, 1970a), and investments in teaching facilities, that is, the effects of high faculty-student ratios, high levels of expenditure per student, good libraries, and so on. The negative effects of high quality might come most from those aspects of quality related to "investment" in students and in competitive standards--that is, the effects of school selectivity, the average ability level of the students, the presence of graduate training and research opportunities to distract the faculty from teaching, and so on. But both of the categories of quality measures whose effects we are trying to distinguish are undoubtedly highly correlated--schools with high levels of expenditure also tend to be the schools which have the most selective admissions policies, and the student bodies with the greatest overall academic ability. Separating, in the analysis of our data, the effects of these interrelated aspects of school quality is one of the major aims of this study. (For such an analysis at the high school level, see Meyer 1970b).

The theoretical ideas which bear on the relation between college quality and the social status of student occupational choices can be summarized in the following way. We are concerned with the way the educational stratification system affects the allocation of students into the occupational stratification system. Holding constant individual qualities of the student, including the occupational plans with which he approaches the world of the college, we conceive of his final occupational choice as reflecting his (and others') conception of his worth or success as a student. This, in turn, may be affected in several inconsistent ways by aspects of the quality of the college. If the fundamental success of the student is defined by the prestige of the school he is in, the higher the quality of the college, the higher the social status will be of the occupations chosen by given students. If the student's success is greatly affected by the educational facilities (including quality of teachers and the amount of their time which is available) of the college, school quality will also produce higher status occupational choices. (School facilities and school prestige are undoubtedly closely interrelated.) The quality of a student's peers (ability, social status, etc.,) may similarly operate as a resource to increase the overall success of the student, in which case higher-quality schools could again be expected to lead to higher status occupational choices. But if the definition of the student's success is formulated primarily in terms of his location (grades, etc.) inside the college, the overall success of his peers will negatively affect the definition of his own overall success, as his relative location in the stratification system of the school is likely to be lower.

This complex network of effects which we see as connecting school quality with student occupational choice status is shown in Figure I.

FIGURE I

Propositions on the Effects of School Quality
on the Status of Student Occupational Choices
(Individual Student Characteristics Held Constant)


College Prestige
College Quality
Educational Resources and Facilities
Average Peer Competence
The Student's (and Others') Conceptions of His Overall Worth or Success
Social Status of Occupational Choice
+
+
+
+
+
+
+
+
−

As can be readily seen from the propositions illustrated in Figure I, the overall effect which we suppose college quality to have on the status of student occupational choices is ambiguous. It is the primary aim of this study to empirically define this overall effect, and to see whether by analyzing the effects of a variety of indicators of college quality, we can isolate the specific processes which, we argue, operate to create this intellectual ambiguity.

(2) *The second major problem of this study is to analyze the characteristics of colleges which affect the degree to which students choose occupations which are academic in character.* Quite apart from differences among occupations in their social status, and from college effects which may *raise* or *lower* student occupational choices in this stratification system, we can see what factors move student goals closer to or further from the activities characteristic of the college itself. In particular, occupations of generally high social status can be separated according to their degree of integration with the academic world. Some professions--medicine and law, for example--are not usually taught at the undergraduate level, and thus lawyers and doctors are not conventionally found among teachers at this level. Further, the primary areas of professional practice in such occupations are completely independent of the academic world. Students learn about, and select, these occupations on the basis of their wider social experience, not peculiarly on the basis of their college experience. (Thielens, 1957). At the other extreme are occupations such as historian or biologist. History and biology *are* taught at the undergraduate level, and they are taught by historians and biologists. Further, teaching and research in the academic world are some of their most central professional activities. In these cases, students learn about the occupation and get the opportunity to identify with it in the college itself.

One can make some of the same arguments about college impact on more or less *academic* occupational choices as we have made above about college effects on occupational status. High quality colleges may support student academic interests by providing able teachers and prestigious academic career lines. Or they may decrease such interests because of their competitive pressure. In a study of a very high-quality college, Raffel (1969) shows some data suggesting that the negative comparisons (or "frog-pond" effects) created by this school lead students away from their original academic interests into the more secure high-status professions, (predominantly medicine and law).

Another college attribute has been discussed in the literature as affecting student choices of academic (or college-related) careers. Schools of smaller size and simpler structure are thought to generate more meaningful teacher-student interaction and more student involvement in and identification with academic work and the structure of the college.*

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*As we will see later, college size and organizational complexity are closely related and in this report are treated as representing the same general variable.

There have been a number of suggestions--beginning with the original work of Knapp _et al._, (1952, 1953)--that these factors make small schools more likely to generate peculiarly academic career identifications. Another quite different factor which might produce the same result is suggested by Kamens (1968). He finds that smaller schools tend to have bigger dropout rates among students of any given ability level, and argue that such schools do not give students a sense of their place or potential in the larger occupational structure. Simply by virtue of the isolation, or small size of a school, that is, students may lack confidence about where they stand in the professional training and job markets. It might follow from this situation that students in such schools would be likely to choose the one set of professions with which they are most integrated-the academic professions. Thus, small schools could generate academic occupational choices in either (or both) of two ways--by integrating students closely with academic models and career lines, or by isolating them from non-academic career lines. This study attempts to show empirically whether this overall effect actually occurs.

CHAPTER II: DATA, METHODS AND MEASURES

A. The Data. In this study, we work with a sample of 946 students who were freshmen in a sample of 99 American colleges and universities in February 1963. In a major survey of deviant behavior, in particular academic dishonesty, Bowers (1965, 1966) drew a sample of 99 schools from the more than two thousand institutions of higher education listed by the United States Office of Education. Obtaining lists of students from student directories, he mailed one hundred questionnaires to a random sample of the listed undergraduate students at each college. Not all the hundred students listed were still in school, but of those who were, Bowers obtained a response rate of about 60%. Thus, he had 50-75 questionnaires from the undergraduates in each institution, and the resultant 5,422 questionnaires provided the basic data for his analysis.

In the spring of 1966, those respondents in the original Bowers sample who had been freshmen were sent further questionnaires. There were 1665 of these students (out of 2405 freshmen in the original sample base). In the normal academic course of events they would have been seniors at their original institutions in 1966, but some had dropped out, some had been delayed in their educational programs, and some had transferred to other schools. All told, 946 questionnaires were returned--57% of the students who had responded as freshmen--and these provide our basic sample. Most of these students were in fact still enrolled at their original school (68%); the great majority of these were seniors. Of the 28% of the students who had left their original school, most had transferred to other schools, and a minority had simply dropped out. These facts provide the largest known source of unrepresentativeness in our data when they are interpreted to be a sample of the American undergraduate student population:

1. Overall, almost half of the students who enter an American college probably drop out or transfer before graduating (Kamens, 1968, has an extensive discussion of this point). In our sample of 946 students, only 28% had left their original school. Primarily, our undersampling of this group results from our inability to get questionnaires to them--that is, to find out where they were. This sampling bias is a problem with which we must reckon in this study. Since one of the most obvious ways in which a school can affect the occupational choices of its students is by leading greater or lesser numbers of them to drop out, it is important that we not lose track of, or grossly underestimate, dropouts and transfers.

   Throughout this report, we present data on our 946 students, so that the reader can see on exactly how many cases our findings are based. But none of the findings of this study are significantly changed when our subsample of students who dropped out or transferred is artificially inflated to comprise half of the total sample.

Our data are also known to be unrepresentative in assessing college effects on the occupations of American college students in general for two additional reasons:

2. The data arise from a sample of colleges, not of college students. Each college had an equal likelihood of being selected in our sample. Within each selected college, a sample of about 100 students was drawn. This means that students in smaller colleges were much more likely to be selected as individuals in our sample. Thus, our sample contains many more students in small schools than would a sample drawn on the American student population.

   This bias is appropriate for this study, which focusses on college social structures and college effects, not on the estimation of individual distributions and the effects of individual characteristics. Nevertheless, it must be remembered throughout this report that the data do not accurately describe college students in general. For example, because small colleges tend to train students for careers in the educational system, our study contains an unrepresentative number of future school teachers among the students in the sample.

3. This study analyzes changes in students' occupational choices over a three-year period--from the freshman to the senior year for most of the students. Four types of college effects are not not captured in the data: (1) Anticipatory and admission effects. The decision to attend a given college, or the college's decision to admit a given student, may affect his occupational choice before he even arrives. (2) Lagged effects. A college may continue to affect the occupations chosen by students even after they leave (Spaeth, 1970). Students who have attended a prestigious college, for instance, may find occupational advancement easier no matter where, in the occupational structure, they start out after leaving college. (3) Effects on non-students. The existence of a given college or set of colleges may have important effects on students who attend other colleges, or no college. It is obvious, for example, that colleges in America improve

the occupational prospects of students who attend them, and also act to limit the prospects of students who do not go to college, in comparison with a situation in which colleges did not exist. And it is sometimes argued that certain prestigious schools--Harvard, for example--operate to limit the self-conceptions and aspirations of students who attend, for example, Boston University.

4. Most immediately, we do not have data on what may be called induction effects. Our first questionnaire was filled out by the students in the winter of their freshman year. Any changes in occupational choice which these students may have experienced earlier in the year are not captured by our data. Wallace (1966), for instance, shows evidence that these effects may be quite large, as students are going through the shock of adjusting to a new institution with new standards of evaluation. It is quite possible that the most important effects of colleges on student occupational intentions occur during this period, when the students are, in effect, adapting to a new stratification system. In any event, our data cannot show such changes, but can only show the changes which take place after initial acclimitization to the institution has occurred.

One other source of potential inaccuracy in our data must be noted. Data on the students at both points in time--the freshman data and the senior data--were gathered through mail questionnaires. About 69% of the sampled students responded to the freshman questionnaire. Our senior questionnaire was sent to all of these, but was returned by only 57%. (As we have indicated, the questionnaire never reached many of the non-returnees, whose addresses were unavailable.) This leads to the underrepresentation in our sample of the students who had dropped out or transferred which we have discussed previously. But a rather high overall nonresponse rate was necessarily involved in the design of the study, which depended on obtaining two mail questionnaires separated by more than three years from a sampled respondent in order to include him in the study. This could have resulted in substantial inaccuracies or biases in our sample about which we remain ignorant, and for which we are unable to correct. The only assurances we have on this score are that (1) this study aims at showing relationships, which are less likely to be affected by unrepresentative sampling than are estimates of actual population distributions on variables; and (2) Bowers (1965, 1966), in evaluating these same data from the point of view of estimating student dishonesty, concluded that mail questionnaire procedures did not produce demonstrably unrepresentative samples.

The questionnaires themselves covered many different types of information, only a few of which are relevant to the present study. Specific questions covered the student's academic and career interests, plans for graduate training, and so on. Other questions attempted to tap the value-orientations of the student and of the peers he defined as constituting his friendship group. Still other questions asked about the values which seemed to him to dominate student life on campus. Many of the questions--irrelevant for our purposes--concerned his participation in, and beliefs about, academic dishonesty and other types of deviant behavior commonly found on campuses.

Aside from the questionnaires, two additional sources of data were utilized in this study. (1) Information on the abilities and academic records of the individual students was obtained from the registrars of their colleges. Registrars provided information on the students' scores on college aptitude tests, on the grade averages the students had compiled in their academic work, and on the students' records of enrollment at the college (and thus the number of years of academic work which they had completed. (2) In order to show how college characteristics affect student occupational decisions, a number of measures of college attributes are necessary. In the present study some of these attributes are measured by aggregating the answers of individual students in the colleges. The original survey of college students, from which we drew our sample of freshmen to follow up, contained information from about fifty students in each of the colleges. The proportion of these students who gave a given answer to a questionnaire item (for instance, reported that their teachers seemed personally interested in helping them in their work) becomes an attribute of the college (Lazarsfeld and Menzel, 1961). The students, that is, are taken to be a sample of informants about their school. In our analysis, we employed several such attributes to describe the colleges.

However, other data on the colleges was also available. A number of published sources describing colleges, including the College Characteristics Data Bank (Nash, 1966), contain information on most of the institutions of higher education in the country (also see Hawes, 1962, and Singletary, 1968). We used information from these sources to describe many different features of the colleges in our sample, such as their size, their organizational complexity, and their selectivity.

B. Occupational Choices of Individual Students. In order to ascertain their occupational plans, the students were asked the following question, both as freshmen and as seniors (i.e., in 1966).

> What kind of occupation do you plan to go into? (Be as specific as you can about position, type of work--e.g., claims adjustor for an insurance company, teacher in a local high school).

Coders classified the students' answers to these questions into a rather detailed set of categories, which was reduced for purposes of our analysis to several simple classifications.

Overall, we found a few notable changes in the distribution of occupational choices between the freshman and senior years. Most obviously, the proportion of students who did not report an occupational choice declined a little (from 8% to 7% of our 946 students). The largest increases in occupational plans occurred in the number of students intending to become college teachers (from 4% to 11%), and the decreases occurred among students planning on becoming doctors and dentists (from 8% to 4%). These findings are generally similar to those reported by Davis (1962, 1964), although his study is based on a very different sample, and uses retrospective questions to ascertain freshman occupational choices.

By and large the overall distribution of occupational choices evidences very great stability over the years that our study covers. The proportion of students making given choices as freshmen and as seniors are remarkably similar. This is strikingly untrue, however, of the occupational choices of individual students. In Table 1 we classify students by their freshman occupational choices, and then show the proportions who retained these choices or who moved to some other specific choice by the time they were seniors. The Table shows that the majority of the students we studied (the actual figure is 50.2%) shifted their occupational choice between their freshman and senior years, even when the students who stated no choice as freshmen are eliminated from consideration. Put differently, in only four of our occupational categories were a majority of the freshmen likely to retain their choice by their senior year--the fields of education, college teaching, nursing, and engineering.* In all seven other categories, fewer than 50% of the students who started out remained by the end of their senior year.

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*Interestingly enough, these are all occupations with counterpart curricula at the undergraduate level.

Even though Table 1 shows an enormous amount of mobility in student occupational choices, the actual amount of mobility is *understated* by the data. (1) Some students undoubtedly shifted away from their original occupational choice, but returned to it by their senior year. These students are not counted as shifting in Table 1. (2) The categories of the table are actually quite crude, and many students undoubtedly changed their occupational choices in ways not captured by these categories. For example, a student who shifted from a career as economic researcher to one as a college teacher of history would be classified in the table as having retained his desire to pursue an intellectual career in teaching or research. Any simple set of categories of occupational choices inevitably lumps together many different kinds of occupations, and so understates the extent to which individuals are actually changing their minds about the specific careers they intend to follow.

For purposes of the present analysis, we reduce the complex array of occupational choices into even fewer categories than are shown in Table 1. We do this by making two simple distinctions which are crucial to this study of school effects. Occupations are classified as of *higher* or *lower social status*. And they are classified according to whether they are more or less *academic*.

We decide the social status of occupations according to their location on one of the conventional measures of occupational prestige (for example, see Hodge *et al.*, 1964). Of course, almost all the occupations chosen by college students are of generally high prestige, but it is possible to make finer distinctions even within this limited range. When this is done, we arrive basically at a distinction between the established professions and other middle-class occupations. Thus in our high status category go medicine, law, science, college teaching, engineering, dentistry, and the clergy. The lower status category includes two large sets of occupational choices--elementary and secondary teaching and administration, and occupations in the business world--but many others are included here too, such as social worker, librarian, artist, journalist, draftsman, military officer, and civil servant. Many students who choose these occupations may in fact end up in positions of power and prestige. A student, for example, who enters the business world may end up as president of a large firm. But our classification here is based, not on where students will ultimately end up, but on where they start. Our high status occupational choices are those which by virtue of specialized training (usually at the graduate level) entitle an individual, more or less by social definition, to assume a prestigious position. Students entering business (or educational) positions are entering middle-level jobs which offer some prospects, but no guarantees, for a great deal of upward mobility. Students who enter medicine, engineering, or college teaching, are eligible for prestigious positions upon the successful completion of their training. To some extent, of course, this is becoming true of the business world too, as more students obtain graduate degrees in business administration and then proceed more

Table 1

Student Occupational Choices: Changes Between Freshman and Senior Years

(Cell entries are percents giving each senior occupational choice of those students making or given freshman choice)

	Senior Occupational Choice													
Freshman Occupational Choice:	Doctor or Dentist	Lawyer	Engineer	Scientist	College Teacher	Other Teacher	Proprietor or Manager	Nurse	Social Worker	All Other Professional	Clerical, Sales, etc.	None, Undecided, or Housewife	Freshman Choice TOTALS (= 100%)	Percent of Total Sample
Doctor or Dentist	45 %	1	3	9	10	6	9	5	1	1	4	5	(78)	8%
Lawyer	0 %	45	0	0	15	5	23	0	3	0	3	8	(40)	4%
Engineer or Architect	0 %	0	60	5	2	4	18	0	0	4	2	7	(57)	6%
Scientist, including social scientist	4 %	1	9	23	20	14	6	3	4	6	1	7	(69)	7%
College Teacher	0%	5	0	3	54	23	0	0	0	13	0	3	(39)	4%
Teacher or Administrator Below the College Level	0%	1	1	2	10	68	3	1	2	4	3	5	(303)	32%
Proprietor or Manager	0%	5	3	10	4	10	41	3	1	8	8	8	(78)	8%

Table 1 (Continued)

Student Occupational Choices: Changes Between Freshman and Senior Years

(Cell entries are percents giving each senior occupational choice of those students making or given freshman choice)

Senior Occupational Choice

Freshman Occupational Choice:	Doctor or Dentist	Lawyer	Engineer	Scientist	College Teacher	Other Teacher	Proprietor or Manager	Nurse	Social Worker	All Other Professional	Clerical, Sales, etc.	None, Undecided, or Housewife	Freshman Choice TOTALS (= 100%)	Percent of Total Sample
Nurse or other medical assistant	0%	0	2	8	4	19	4	53	4	2	0	6	(53)	6%
Social Worker	0%	2	2	7	5	19	2	5	44	2	5	7	(43)	5%
All Other Professional and Semi-Professional (clergy, artists, journalists, etc.)	1%	3	4	1	10	26	13	1	1	26	8	5	(77)	8%
Clerical and Sales, Skilled, Semi-skilled, or Unskilled	0%	3	5	5	5	34	11	3	0	3	18	13	(38)	4%
Undecided, No Choice, or Housewife	3%	10	4	7	11	15	15	1	3	7	6	17	(71)	8%
Senior Choice Totals	(42)	(40)	(56)	(55)	(104)	(304)	(99)	(45)	(37)	(59)	(39)	(66)	(946)	100%
Percent of Total Sample	4%	4%	6%	6%	11%	32%	10%	5%	4%	6%	4%	7%	100%	

directly than was traditionally the case to move into substantial executive positions. But this career line was planned by only a small number of the students in our sample planning on business careers, and for the most part our classification of this career in our lower status category is quite appropriate.

Among our higher-status occupations, we made a distinction according to their degree of integration with the academic world. In this classification, fields are *academic* if they are built into the undergraduate curriculum, if practitioners are found among undergraduate teachers, if one of the primary areas of professional practice lies in institutions of higher education, if students learn about the occupation primarily on the basis of their college experience, and if the primary professional values seem to focus on the academic and intellectual virtues of education and inquiry rather than achieving practical consequences. Thus, *academic* choices include primarily college teaching and research, other types of scientific research, and various artistic or literary activities. Non-academic choices include medicine, law, engineering, and so on. In each of these fields, professional practice and professional values focus largely on the "real" world, not the academic.

Thus we end up with three general occupational categories, which are shown in Figure 2. Throughout this report we will refer to these as *academic*, *professional*, and *lower status* occupations, even though these labels are not quite exact. It would be possible to distinguish lower status occupations according to their links with the academic world (education, for instance, would be closer, and business would be further from the "academic"), but for the purposes of this analysis, such a further distinction is not necessary. It is also true that many of the occupations we consider lower in social status, as well as all of those we are classifying as *academic*, are ordinarily defined as "professions." But for convenience of discussion in this report, we use the term *professions* to cover only those occupations which are high on our status classification, but not academic in character. In fact, this analysis focusses simply on the two types of high-status occupations. In studying the first research problem--the effects of school characteristics on occupational choice status--the high status choices are combined. In studying the second problem--the effects of college characteristics on the degree to which occupational choices are academic--we look at each separately.

Figure 2

A Typology of Occupations, According to Social Status and Degree of Integration with the Academic World

	Academic	Non-academic
High Status	Research College teaching Science	Medicine Law Clergy Engineering
Lower Status	Education, Business, Civil Service, Military, etc.	

C. Individual Factors Affecting Occupational Choices. In order to show college effects, it is necessary to hold constant the relevant variations among individual students. Otherwise, what appear to be college effects may only be results of the fact that different types of colleges select different types of students (for a general review of student characteristics affecting occupational choice, see Davis, 1962, 1964).

By ascertaining freshman occupational choices, we have limited the problem here. We can study the senior choices of those students who made a given freshman choice, and in doing so will hold constant much more than the actual freshman occupational choice. We have partially held constant those factors which are strongly associated with freshman choice. For example, students' occupational choices are affected by the values to which they are committed (Rosenberg, 1957). But once initial (or freshman) choices are held constant, the differences which value measures make in occupational choice changes are more limited, and these variables do not need to be held constant in our analysis.

The same thing is true, oddly enough, of the student's social class background.* This variable has large effects on students throughout their educational careers--it affects their ability, their motivation, their educational opportunities, and independent of each of these, it affects the decisions they make. But it turns out that once we start with a sample of college freshmen (on whom all these processes have acted previously), and take into account their ability and their initial occupational choices (which are of course substantially related to social class), the student's social class has almost no effect on further changes in his occupational choice. For our purposes, therefore, this variable does not need to be held constant (see Spaeth, 1968a, 1968b, 1970).

Two individual variables must be taken into account in explaining changes in occupational choices through college. (1) Students' overall ability level affects the decisions they make. (2) Sex roles play a powerful role in defining student occupational choices.

(1) Two sources of information were available to assess the academic ability levels of the students. We obtained from the college registrars the students' scores on college entrance aptitude tests, when these were available. For most of the students (52% of our 946 cases) this consisted of the quantitative and verbal scores on the College Entrance Examination Board's Scholastic Aptitude Test. For some students (31% of the sample), these were not available, but other intelligence or aptitude test scores were available from the schools.

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*Social class was measured with information reported by the student about his father's occupation.

In these cases, we translated the test scores into their equivalents on the Scholastic Aptitude Test, using the published nationwide standards to establish equivalencies. Overall, therefore, we obtained aptitude information on 83% of our sample. As a simple measure of academic aptitude, we took the student's score on the verbal part of the S.A.T. test, or its equivalent. Verbal scores tend to be closely associated with grades and other indicators of college performance.

We also wanted to include in our measure of the student's ability some information on his past academic achievements. College grades could not be used because these may be related to some of the college characteristics the effects of which this study tries to assess. But the students were asked on the freshman questionnaire to indicate their high school grade averages. While high schools vary in their grading standards, this source of error is probably not highly related to characteristics of the colleges the students are attending.

Our overall measure of student ability, then, is an index combining students' verbal S.A.T. scores or their equivalents with their high school grades. Each indicator is trichotomized and scored from 0 (low) to 2 (high), and the student's scores on the two indicators are added together, producing an index running from 0-4.* For those students for whom information on one of the indicators (usually aptitude) was missing, index scores were defined by counting the other indicator twice. This simply means that some students could be assigned an academic ability level only on the basis of their reported high school grades.

How does ability affect occupational choice? Students of higher ability are more likely to enter college with plans for higher-status and more professional occupations with more demanding standards of educational preparation. But we are interested in seeing whether, whatever the plans students have as freshmen, they are more likely to end up as seniors intending to pursue such occupations. Table 2 shows the relevant data. Students are classified by their freshman plans, and also by the ability index (collapsed into three categories). In each group so created, the percentage of students who had high status occupational plans as seniors (or more precisely, in 1966) is shown.

A comparison across each of the rows in Table 2 shows that higher ability students are more likely to move up to high status occupational plans if they did not begin with such plans than lower ability students or if they began with no occupational plans. And they are also more likely to retain such plans if they did enter college with them. Thus Table 2 shows that higher academic ability consistently tends to produce

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*Verbal S.A.T. scores were trichotomized in the following way: 2 = 600-800; 1 = 500-599; and 0 = 200-499. Reported high school grades were scored as follows: 2 = A, A-; 1 = B+, B, B-; and 0 = below B-.

Table 2

Social Status of Senior Choice According to Freshman Choice and Ability Index Score

(Cell entries are % choosing high status occupations as seniors)

Freshman Occupational Choice:	Ability Index Score		
	High	Medium	Low
High Status	67% (119)*	64% (92)	56% (89)
Low Status	28% (162)	12% (181)	11% (232)
Undecided	48% (33)	22% (18)	25% (20)

*Figures in parentheses are base numbers on which percentages are computed.

occupational plans which are higher in status. Not only do students with high ability come to college with higher status occupational plans, but this relation is maintained and reinforced by the academic standards and pressures characteristic of colleges.

We can look at more detailed data than those shown in Table 2. It is possible to see what effects student ability has on the tendency to select high status academic occupations and also to see the effects of ability on high status professional (non-academic) occupational choices.* When we look at these two types of high status occupational choices separately, it turns out that high ability positively affects each of them. Holding constant initial freshman choices, students with greater ability are more likely to move to or to change to an academic occupational choice as seniors. And independently of this, students of higher ability are more likely to end up as seniors with professional (i.e. high status, non-academic) occupational choices, again holding freshman choices constant. It is interesting to note, however, that the effects of ability on high status academic occupational choices are much greater than the effects of ability on professional choices. It appears that students are guided much more by their academic ability in selecting academic rather than other kinds of high status professions. Such academic virtues as high S.A.T. scores and good grades apparently seem more meaningful to students as indications of their strictly academic abilities than as indicators or guides to their position in broader aspects of the social class system. This is a point to which we return in the final section of this report.

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*These results are shown in Table A-1, Appendix A.

Overall, the data in Table 2 as well as in the more refined tabulations show that throughout our analysis of school effects on occupational choices individual ability must be held constant. Otherwise, any effects that a given kind of school appeared to have could be thought to arise from the fact that this kind of school acquired more able students. So, in holding constant the individual characteristics of students in order to study strictly school effects, it is necessary not only to hold constant the occupational choices students come to college with, but also some measure of their abilities.

(2) Along with academic ability, sex is a major factor affecting student occupational decisions in college, which must be controlled. Of course men and women students enter college with different occupational choices, but even beyond this as previous studies have shown (Davis, 1964) the tendencies of the two sexes to choose different occupations are sharply reinforced during the college years. We can show this more clearly by separating our high status occupational choice category into its two components (academic and non-academic professions) and looking at the way men and women students change their choices in these two areas independently.

To begin with, we can note that 16% of the male students entered as freshmen with an academic occupational choice, while only 7% of the female students had such intentions as freshmen. The sex differences are even more extreme in relation to high-status professional (non-academic) choices. Thirty-seven percent of the male students had such intentions as freshmen and only 5% of the female students! Essentially, what these data show us is that very few female students plan, on entering college, on going into any of the professions--academic or especially non-academic--whereas these are significant occupational categories in the thinking of male students. It turns out, of course, as many studies have shown, that female students when they do have clear-cut occupations in mind intend to go into occupations of distinctly lower social status, especially into primary and secondary education. In fact, a pronounced number of the women students in our sample who had a definite freshman occupational choice, 50%, intended as freshmen to go into primary and secondary education.*

Even though very few of the women intended initially on entering professional occupations, we can see how the college experience may have changed this. The two parts of Table 3 show, separately for academic and non-academic professions, the senior occupational choices of each

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*It should be remembered that this figure is larger than would be characteristic of American college women as a whole because our sample over-represents students from small colleges, who are more likely to go into education.

Table 3

A. Senior Academic Occupational Choices According to Freshman Choice and Sex

(Cell entries are % choosing academic occupations as seniors)

Freshman Occupational Choice:	Sex			
	Male		Female	
Academic	52%	(71)*	40%	(35)
Other	17%	(333)	9%	(429)
Undecided	21%	(43)	15%	(27)

B. Senior Professional Occupational Choices According to Freshman Choice and Sex

(Cell entries are % choosing professional occupations as seniors)

Freshman Occupational Choice:	Sex			
	Male		Female	
Professional	57%	(164)*	17%	(24)
Other	12%	(240)	2%	(440)
Undecided	26%	(43)	4%	(27)

*Figures in parentheses are base numbers on which percentages are computed sex with freshman choice held constant. In the first part of the table (3A) men and women with academic and all other choices are compared and the proportion intending to go into academic occupations as seniors are shown. In the second part of the table (3B) men and women students with non-academic professional and all other freshman occupational choices are compared and the proportions with non-academic professional academic choices as seniors are shown.

Table 3A shows that whatever their freshman occupational choice--whether academic or not--male students are somewhat more likely than female students to have academic choices as seniors. Thus among those students starting out with academic choices, 52% of the male, but only 40% of the females retain them. And of those students with other freshman choices 17% of the males and only 9% of the females move toward academic intentions. Women are less likely to plan on academic occupations as freshman and whether they do or not are more likely to move away from such choices as they proceed through college. This is a substantial effect. But Table 3B shows an even more striking effect. Holding constant their professional (non-academic) occupational choices, male students are much more likely to acquire or retain these choices than females. Of the students with freshman non-academic high status professional choices 57% of the males, but only 17% of the females retain these choices as seniors. Of those students who did not have such choices as freshman 12% of the males and only 2% of the females acquired them. This finding simply means that one cannot use our samples seriously to discuss women students with high status professional occupational choices. In our sample we start with only 24 such students. Of those 24 only 4 had retained intentions in this occupational category by the time they were seniors. And, of our 467 women students who did not have such choices as freshman, only 9 acquired them during their college years. Thus we end up in our sample with only 13 female students who have non-academic professional occupational choices.

In discussing this situation it is important to note that the paucity of female students with professional occupational choices does not simply pose a methodological problem for our study, but is, rather, a substantive fact of some importance. Given the situation we find, it is substantively almost meaningless to talk about the effects of college characteristics on the professional choices of female students. In this area there is clearly a wider social agreement about sex roles in America which transcends particular organizational structures in colleges and probably transcends their possible effects. Throughout American education, male and female students tend to be organizationally treated with a certain amount of equality. Their academic records tend to show this organizational equality. So far as grades go in academic work, they have roughly similar aspirations and goals. They see themselves, that is, as academically similar--as students. When they consider in their plans and aspirations entering into the wider society with its emphasis on educational status--in particular the occupational structure--the situation dramatically changes. We no longer can talk about occupational plans of students but must immediately distinguish the sexes. In these areas of American educational life the fundamental building blocks of the social structure are sex roles. There is men's work and there are women's occupations. There are some areas of overlap (historically the academic professions have been among these areas but as the academic world has become increasingly bureaucratized the proportion of women in it has clearly declined (see Bernard, 1964)).

In any case, throughout our analysis sex along with academic ability must be controlled. These individual characteristics so inescapably affect work choices that if we want to show the effects of characteristics of colleges we must hold them constant.

D. College Characteristics. In order to study the ways college quality and college size affect student occupational choices it is first necessary to sort out the different kinds of characteristics of colleges which can be used as measures of these concepts. It is also necessary to discuss the relationships between these various characteristics.

Ideally, we should be able to proceed in the analysis of our data by introducing into the analysis several college attributes simultaneously. In this way it would be possible to find out which of several interrelated characteristics of colleges contributed more to a particular effect. And, it would be possible to show the independent effect of a given characteristic by studying it with a number of other characteristics held constant. In this study we cannot proceed in this way. Our sample contains only 946 students. When we hold constant the sex, ability, and freshman occupational choice of individual students our sample size leaves us with only a few students in each group. To further break down the cases according to several characteristics of colleges simultaneously leaves no cases left to compare.

We proceed, therefore, in another way. In this section it is necessary to sketch out the interrelationships of the basic characteristics of colleges which we want to study. In this way it is possible to suggest, when a given characteristic is studied, what other characteristics might be operating along with it. Conversely, it is possible to be sure that an apparent effect of a given characteristic cannot be due to the hidden operation of another given characteristic because we know that the two are independent (Selvin and Hagstrom, 1963). Thus, if we lay out beforehand the structure of interrelationships between college characteristics, we can study their separate effects with some insight into the particular variables which might be operating and into the possibility of the creation of effects by uncontrolled and spurious factors.

One basic fact about the organization of higher education in America which aids in our analysis is this: The size and organizational complexity of a college and its quality as measured by a number of commonly used characteristics are almost uncorrelated. Thus, as we look at the relation in our sample of schools between the size of a college's student body and its selectivity in the admission of undergraduates, we find a correlation of only -.02.* The correlation between size and the proportion of the students who come from high status families, is only -.06. Some indicators of college quality are, however, positively related to size and others are negatively related. The proportion of the full-time faculty with doctorates shows a correlation with size of .34 and similarly, the correlation of college size with library size is .76. On the other side of the scale, the correlation of college size with faculty/student ratio is -.37. Thus it appears that some aspects of school quality are more often found in large schools, others in small schools, and some show no relations. In general it seems that physical and formal organization indicators of quality (e.g., library size, budget per student and faculty training) are positively related to size while many student body characteristics show almost no relation and indicators of teacher/student relations are negatively related.** We can show the overall situation best by reporting the results of a factor analysis of the interrelations of a number of school characteristics of interest in this study. We included characteristics relevant to school size and complexity, characteristics related to school quality (conceived as resources in terms of faculty, students and facilities) and a number of other characteristics. Among these were these types of organizational control: Public schools, secular private schools, Protestant and Catholic schools, each represented in the factor analysis by a dummy variable. Similarly, dummy variables were used to record whether a school was co-ed or whether it was a mens or a womens college. Table 4 shows the loadings which each of the included indicators of college characteristics received on the first two factors emerging from the analysis.*** The first factor clearly reports what we can usefully call the quality of a school. The second reflects its size and organizational complexity. Together they account for 53% of the covariance among the indicators in the table.

The first factor appears to assess overall college quality. It receives high loadings on many of the characteristics which had been anticipated to be indicators of this variable--the proportion of students not admitted, the faculty/student ratio, the proportion of students from high status backgrounds, the proportions with high verbal S.A.T. scores, the proportion of faculty with doctorates, and reported expenditures per student. School size shows essentially no loading (-.05) on this factor. The second factor shows extraordinarily high loadings on school size, on the availability of graduate training at the school and on library size. Several of the quality indicators show almost zero loadings on the factor.

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*Sources of the measures of college characteristics discussed in this section are indicated in Table 4. School size and organizational complexity--as measured by the presence of graduate degree programs--are very highly related (r = .78), and throughout this study they are treated as the same variable, since we cannot isolate their effects.

**Student reports that their teachers are personally interested in their work and that they have frequent informal conferences with them are much more common in small schools.

***The BMD03M General Factor Analysis program was used (Dixon, 1968), which performs a principal components solution and an orthogonal rotation of the factor matrix.

Thus in our later analysis of the data, when we show the effect of school size, we can be fairly confident that size and complexity are involved but that school quality characteristics are generally not involved. And when we show the effects of such college attributes as selectivity and average social class background of the students in the school, we can be sure that school size is not operating spuriously in the background.

On the other hand, if we show the apparent effects of the proportion of the school faculty with doctorates we may be showing a school quality effect (loading of +.65) but the effect may really be due to size (+ .51). And when we examine the effect of faculty-student ratio instead of showing a quality effect (loading of +.61), we may be showing a size effect (loading of -.27). When we use variables such as these in our later analysis we will need to be cautious in interpreting them.

Table 4

Loadings of a Number of College Attributes on First Two Orthogonal Factors

College Attributes:	Factor I (College Quality)	Factor II (Size)
School Size[a] (four categories of student enrollment: 0-499, 500-999, 1000-2999, 3000 and over)	-.05	.86
Availability of Graduate Training at the College[b] (three categories: none, masters degree only, more than masters degree)	.05	.91
Selectivity; or Percent of Applying Students Not Admitted[c] (four categories: schools in Berelson's top 50, others admitting less than 46%, 46-75%, 76% and over)	.67	-.10
Faculty/Student Ratio[a] (four categories: under 1/16, 1/14-1/16, 1/11-1/13, over 1/11)	.61	-.27
Percent of Students with High Status Families[d] (four categories, defined by scores on family socio-economic status index)	.81	.04
College Average Verbal SAT Score[e] (or equivalent) (two categories: 200-499, 500-800)	.68	.04
Percent of Faculty with Doctorates[af] (five categories: less than 30%, 30-40%, 41-50%, 51-66%, 67% and over)	.65	.51
Library Size[b] (four categories: less than 75,000 vols., 75-149,000, 150-499,000, 500,000 vols. and over)	.33	.82
Expenditure per Student[b] (four categories: under $1600, $1600-2299, $2300-3499, $3500 and over)	.73	.14
Average Grade Given to Students in the College[d] (four categories, defined on standardized grade point averages reported by registrars. On a scale with 1 = A, 9 = D+ and below, categories are: higher than 4.1, 4.1-4.49, 4.5-4.79, 4.8 plus)	.14	-.09
Women's Colleges[ag]	.16	-.31
Men's Colleges[ag]	.45	.05
Co-Educational Colleges[ag]	-.48	.21

Table 4 (Continued)

Loadings of a Number of College Attributes
on First Two Orthogonal Factors

College Attributes:	Factor I (College Quality)	Factor II (Size)
Catholic Colleges[bg]	-.11	-.21
Protestant Colleges[bg]	.32	-.56
Private, Non-Religious Colleges[bg]	.20	.12
Public Colleges[bg]	-.41	.58

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a. Source: Taken by Columbia Data Bank (Nash, 1966) from Hawes (1962).
b. Source: Singletary (1968).
c. Sources: Combined Columbia Data Bank (Nash, 1966) data from Hawes (1962) and Berelson (1960).
d. Source: Data aggregated from students in original Bowers (1965, 1966) sample.
e. Sources: Data aggregated on freshmen in original Bowers sample. Supplemented, where unavailable, by average aptitude data reported in Singletary (1968).
f. Ratio computed excluding faculty with professional degrees from either numerator or denominator.
g. Dummy variable: two categories.

CHAPTER III: RESULTS

A. College Effects on Raising or Lowering the Status of Occupational Choices: We turn now to examine the empirical data relevant to the first of the two main problems investigated in this report. What characteristics of colleges effect the social status of the occupational choices of students? In particular, do high quality colleges support and encourage high status occupational choices among given types of students? Or, on the other hand, do they lower the aspirations of their students by providing high levels of competition and a scarcity of faculty time and attention? Similarly, independent of school quality, do large schools increase or lower the aspirations or occupational plans of the students? In investigating these questions we must, of course, hold constant the sex and ability level as well as the freshman occupational intentions of the students. And because we do not have precise conceptions of exactly what is meant by college quality, we need to try out a number of the measures which were examined in the previous section.

Throughout the first section of this chapter we are combining in the analysis the two types of high status occupations we have distinguished: academic and professional occupations. In the next section we will go on to investigate school effects on these types of choices considered separately.

Table 5 shows the effects of the indicator of college quality which had the highest loading on the "quality factor" we identified in the previous section - the percent of students with high social status backgrounds. This indicator, it should be remembered, shows almost no relationship with school size. Students are classified by their sex, their ability level and whether or not their freshman occupational choices were of high status. Students who had no choice as freshmen and/or as seniors are excluded from Table 5.

If any indicator of college quality should show a substantial effect on the aspiration of students we might expect it to be this one. Surrounding any student with peers of high status background should provide a social context in which anticipations of, information about, aspirations to, and support for high status occupational choices should be maximal. On the other hand, it is possible that a "frog pond" effect could appear even here, as well as in other tables in which colleges are classified by the social investment in their students, and thus the level of social competition which they provide.

Table 5

Social Status of Senior Occupational Choice
by Sex, Ability, Freshman Choice,
and Social Status of the School

(cell entries are % choosing high status occupations as seniors)

			Social Status of the Students at the School **	
	Ability	Freshman Choice	High	Low
Male	High	High Status	83% (54)	71% (24)
		Other	63% (32)	60% (10)*
	Medium	High Status	71% (35)	74% (38)
		Other	50% (20)	10% (21)
	Low	High Status	71% (17)	68% (50)
		Other	23% (26)	15% (46)
Female	High	High Status	57% (14)*	53% (15)
		Other	23% (39)	15% (66)
	Medium	High Status	43% (7)*	22% (9)*
		Other	6% (51)	8% (78)
	Low	High Status	40% (5)*	20% (5)*
		Other	10% (42)	9% (100)

Note: Students who made no occupational choice as freshman and/or as seniors are excluded from the table.

* Percentage based on fewer than 15 cases.

** Source: See Table 4

Table 5 shows few interpretable effects on student occupational choices. Comparisons across each of the rows of the table show that students of given ability, sex, and freshman intentions are about as likely to have high status choices as seniors in schools with lower social class as in those with high social class student bodies. In a few of the rows with enough cases to permit comparisons, there are some suggestions that students in higher social class schools are more likely to end up with high status intentions, but most of the comparisons show almost no difference. Table 5 certainly weighs against the argument that higher status schools exert a negative, or "frog pond" effect on their students. None of the comparisons in the table provide any support for such an interpretation.*

In Table 6 we try another indicator of college quality - selectivity. This is measured by the college's reports of the proportion of applying students who are not admitted. Again, it should be remembered from the previous sections that this indicator bears almost no relationship to the school size factor (-.10). Among our measures of school quality, selectivity might be expected to show the strongest "frog pond" effect. This indicator classifies colleges by the overall competence of the student bodies they are able to maintain. Thus, if students are relatively affected in their aspirations by the presence around them of more able peers, this variable should show the effect. Again, of course, students are classified by sex, ability level and freshman occupational plans.

Table 6 shows no consistent school effect. The data on male students show no effect at all, while in the few comparisons possible among the female students there is some suggestion of a positive effect. But overall, students with given characteristics are about as likely in selective as in less selective schools to plan on occupations of high social status when they are seniors. Thus, in Table 6 there is no general evidence to support either of the contrasting ideas about college effects on occupational choices which are developed in the literature.**

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*College average expenditure per student, like college status, is heavily weighted on the "school quality" factor in Table 4, and shows little relation to school size. Its effects on occupational intentions are similar to those of school status. There are no definite effects, but some suggestion of a positive effect. See Appendix Table A-2.

**College average verbal S.A.T. score - a variable closely related to selectivity - also shows no effect. See Appendix Table A-3.

Table 6

Social Status of Senior Occupational Choice by Sex, Ability, Freshman Choice, and College Selectivity

(cell entries are % choosing high status occupations as seniors)

	Ability	Freshman Choice	Selectivity of the College** High (admits 45% or less of applicants)	Low (admits over 45% of applicants)
Male	High	High Status	77% (47)	87% (30)
		Other	63% (27)	60% (15)
	Medium	High Status	69% (35)	76% (38)
		Other	40% (15)	23% (26)
	Low	High Status	71% (24)	69% (42)
		Other	16% (25)	19% (47)
Female	High	High Status	83% (12)*	38% (16)
		Other	25% (24)	14% (71)
	Medium	High Status	20% (5)*	43% (7)*
		Other	15% (26)	5% (95)
	Low	High Status	50% (4)*	17% (6)*
		Other	15% (26)	9% (103)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

* Percentage based on fewer than 15 cases.

** Source: See Table 4

Tables 7 and 8 show the effects of two more indicators of school quality. Two indicators are selected, both of which receive high loadings on the "quality factor" we identified earlier, but which show different relationships with school size and complexity. Table 7 shows the effects of the faculty-student ratio reported by the school which is negatively related to our school size factor (-.27). Table 8 shows the effects of the proportion of the school's faculty with doctorates which is positively correlated with the school size factor (+.51). Both of these variables describe the quality of the school not in terms of the quality of the student body but rather in terms of the faculty time and attention available to the student. The faculty-student ratio defines the amount of faculty time and attention and the proportion of the faculty with doctorates is an indicator of the level of skill and training of the faculty.

Table 7

Social Status of Senior Occupational Choice by Sex, Ability, Freshman Choice, and Faculty-Student Ratio of the School

(cell entries are % choosing high status occupations as seniors)

			Faculty-Student Ratio of the School **	
	Ability	Freshman Choice	High (1/13 and over)	Low (1/14 and below)
Male	High	High Status	81% (54)	75% (24)
		Other	63% (27)	60% (15)
	Medium	High Status	55% (29)	86% (43)
		Other	33% (15)	27% (26)
	Low	High Status	62% (29)	74% (38)
		Other	18% (28)	18% (44)
Female	High	High Status	47% (17)	67% (12)*
		Other	26% (58)	9% (47)
	Medium	High Status	50% (8)*	13% (8)*
		Other	13% (64)	2% (64)
	Low	High Status	29% (7)*	33% (3)*
		Other	13% (67)	5% (75)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

* Percentage based on fewer than 15 cases.

** Source: See Table 4

Table 8

Social Status of Senior Occupational Choice by
Sex, Ability, Freshman Choice, and
Percent of Faculty with Doctorates

(cell entries are % choosing high status occupations as seniors)

			Percent of Faculty with Doctorates**	
	Ability	Freshman Choice	High (over 40%)	Low (40% and below)
Male	High	High Status	82% (57)	71% (17)
		Other	59% (34)	71% (7)*
	Medium	High Status	70% (46)	78% (23)
		Other	42% (19)	15% (20)
	Low	High Status	66% (32)	71% (35)
		Other	23% (31)	13% (40)
Female	High	High Status	62% (13)*	50% (16)
		Other	24% (29)	17% (72)
	Medium	High Status	25% (4)*	33% (12)*
		Other	5% (38)	8% (87)
	Low	High Status	0% (1)*	33% (9)*
		Other	6% (31)	9% (110)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

* Percentage based on fewer than 15 cases.

** Source: See Table 4

The results of Tables 7 and 8 confirm the findings of earlier tables. Comparisons across the rows of each of the tables show that our indicators of school quality do not show consistent effects on the occupational choices of seniors. Again we find no clear supportive effects of school quality on the status of senior choices (although Table 7 suggests, as did Table 5, that there may be small effects of this kind for female students). We find no "frog pond" or competitive effects on the occupational choices of students.* Tables 7 and 8, however, suggest an additional observation.

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*Library size, which is similar to faculty training level, also shows no effects. See Appendix Table A-4

They are quite differently related to school size but neither shows an effect on occupational status. This suggests that school size, too, will be found neither to support nor to depress student occupational aspirations.

This hypothesis is investigated in Table 9 in which school size becomes the school characteristic under investigation. We examine the data to see whether large or small schools tend to differentially increase the social status of occupational choices of students.

Table 9

Social Status of Senior Occupational Choice by Sex, Ability, Freshman Choice, and Size of the School

(cell entries are % choosing high status occupations as seniors)

			Size of School**	
	Ability	Freshman Choice	Large (1,000 and over)	Small (under 1,000)
Male	High	High Status	78% (41)	81% (37)
		Other	59% (27)	67% (15)
	Medium	High Status	74% (50)	70% (23)
		Other	36% (25)	19% (16)
	Low	High Status	68% (37)	70% (30)
		Other	16% (43)	21% (29)
Female	High	High Status	62% (13)*	50% (16)
		Other	16% (44)	20% (61)
	Medium	High Status	33% (6)*	30% (10)*
		Other	3% (62)	10% (67)
	Low	High Status	0% (1)*	33% (9)*
		Other	14% (51)	7% (91)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

* Percentage based on fewer than 15 cases.

** Source: See Table 4

Table 9 shows, indeed, no discernible effect on the status of student occupational choices. Neither large nor small schools appear to produce more high status occupational choices among given types of students.*

Throughout this section, then, we find that neither of the two basic underlying characteristics of colleges under investigation - quality and size - seems to produce an overall effect on the status of the occupations which students are intending to enter on graduation. Neither the supportive effect found in studies of high schools, nor especially the negative or competitive effect appears in our data. A few of the tables suggest that schools higher on quality measures may encourage female students to shift to higher status occupational intentions, but even these limited results are not consistent. And for male students, there are no consistent results at all.

At this point it is possible to speculate that further analysis of these data would indeed reveal supportive and competitive effect. Perhaps each of our interrelated measures of school quality, in fact, captures both positive and negative effects which can be disentangled only by studying the effects of several college characteristics simultaneously. At the high school level we know that something like this occurs - that the social status of the student bodies and the average ability levels of these same student bodies produce contrary and masking effects on the aspirations of individual students. (Meyer 1970 b).

Thus it is, in principle, possible that two closely related characteristics of colleges, such as selectivity (which might be expected to produce a negative effect on student aspirations) and faculty-student ratio (which might be expected to produce a positive effect) could each be partially masking the effect of the other. The only way to deal with this possibility is to examine the independent effects of each variable - that is, its effects with the other variable held constant. This, then, involves studying the effects of the two variables simultaneously, but when we do so we have too few cases to properly analyze, especially in the "deviant" types of schools (i.e., selective schools with low faculty-student ratios, and unselective schools with high ones). But to show what such an analysis might portend, Table 10 reports exactly these data. The effects of college selectivity and faculty-student ratios on given types of students (i.e., with sex, ability, and freshman choice held constant) are examined simultaneously.

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*As is indicated earlier, school size and organizational complexity - most obviously the presence of graduate training - are impossible to distinguish in our analysis. The effects of the latter variable are shown in Appendix Table A-5.

Table 10

Social Status of Senior Occupational Choice by Sex, Ability, Freshman Choice, Selectivity of the School, and Faculty-Student Ratio

(cell entries are % choosing high status occupations as seniors)

			Faculty-Student Ratio**			
			High		Low	
	Ability	Freshman Choice	Selectivity**		Selectivity**	
			High	Low	High	Low
Male	High	High Status	76%(38)	100%(15)	78%(9)*	73%(15)
		Other	61%(23)	75%(4)*	75%(4)*	55%(11)*
	Medium	High Status	57%(23)	50%(6)*	92%(12)*	84%(31)
		Other	36%(14)*	0%(1)*	100%(1)*	24%(25)
	Low	High Status	55%(11)*	67%(18)	85%(13)*	71%(24)
		Other	17%(12)*	19%(16)	15%(13)*	19%(31)
Female	High	High Status	78%(9)*	14%(7)*	100%(3)*	56%(9)*
		Other	24%(17)	25%(36)	29%(7)*	3%(35)
	Medium	High Status	33%(3)*	60%(5)*	0%(2)*	0%(2)*
		Other	14%(21)	13%(40)	20%(5)*	0%(54)
	Low	High Status	100%(1)*	17%(6)*	33%(3)*	-----
		Other	23%(13)*	13%(47)	8%(13)*	5%(56)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

* Percentage based on fewer than 15 cases.

** Source: See Table 4

Few conclusions can be drawn from the sparse comparisons possible in Table 10. The cases are simply too few to permit reliable comparisons across the rows of the table, but it should be noted that there is no real suggestion in the data that in fact opposing effects of different aspects of school quality are observable. That is, school selectivity with faculty-student ratio held constant does not seem to have a negative effect on the status of students' occupational choices. And, faculty-student ratio does not suddenly appear to have a positive effect. It rather continues to appear that neither of these indicators of quality shows any substantial effect on the overall level of occupational status selected by the seniors.

The findings of this section are quite clear. Quality-related characteristics of colleges do not seem to have much impact on the overall position vis-a-vis the stratificational order in which students find themselves upon leaving college. High quality colleges may provide more intense competition for given students, but this does not seem to lower their occupational plans. Neither do the supportive characteristics of such colleges appear to raise aspirations. This peculiar absence of effect - a highly stratified system of colleges sends people into a highly stratified occupational structure but with no apparent independent effect on the location of individuals within that structure - poses some sociological questions. We show some findings and make some comments about this absence of an empirical relationship in the last section of this chapter. At that point we will argue that the kinds of controls the educational system employs, primarily by giving students grades and evaluations indicating their academic worth or value, are not seen by these students as binding enough or as relevant enough to their occupational choices to produce the overall systematic effects for which we have looked in this section.

B. College Effects on Academic and Professional Occupational Choices: We have reviewed the evidence on the first of two major research problems - the effects of college characteristics on student choices of occupations of higher or lower social status. We turn now to examine the data on our second major research problem, the ways college characteristics may shift student occupational choices within the general category of high-status occupations. Can we find college effects on the choice by students of academic professions or, on the other hand, non-academic high-status professions? This is one of the oldest problems to be developed in this rather brief literature. The original studies of Knapp and his colleagues (1962, 1963) suggested that small colleges were especially likely, considering the kinds of students they recruit, to produce people in scientific or academic professions. The intellectual theme running through this literature argues that small schools provide students with exceptional opportunities to relate to their teachers who are specialists in academic fields, and, by providing this kind of close student-faculty contact, encourage students to identify with academic professions.

There are also several lines of interpretation relating school quality to the choice of academic occupations. It is suggested that schools of high quality might be especially likely to a) encourage students to enter academic professions because of their exceptional intellectual requirements and because of the exceptional competence of the faculty; or b) to discourage students from entering academic professions by providing exceptional levels of competition for grades and other indicators of a student's academic abilities (Raffel; 1969). In the present section we are concerned with all these ideas and thus with the effects of both college quality and college size (and complexity) on student choices of academic professions. We are also interested in their choices of professional non-academic occupations, since it is already clear that whatever the gains or losses of academic professions due to the effects of college environments, they do not take place with respect to lower status occupations. If, for example, some types of colleges recruit students to the academic professions, the implication is they are less likely to produce non-academic professionals. And the same observation holds for the opposite effects. So, throughout this section we will be analyzing college effects on the two dependent variables, each considered separately: 1) Whether or not students choose academic professions and 2) whether or not they choose non-academic high-status professional occupations.

In considering the two dependent variables our data limit the possibilities for showing school effects. When we study school effects on academic occupations choices we exclude those students who choose academic professions as freshmen. There are relatively few such students, and when we break them down by sex and ability, we have too few cases to permit comparison. In studying school effects on academic occupational choices, therefore, we are showing data only about the recruitment of students to academic choices who originally had non-academic ones.*

In studying professional academic choices we must also limit our data base. In this case, we exclude female students from the analysis. So few female students choose professional occupations as freshmen and so few retain them or are recruited into them that it is not possible to show meaningful school effects with these data.

Table 11 shows the effects of one of our indicators of college quality - the proportion of students from high status backgrounds - on academic and professional occupational choices. We start with this indicator of quality because it is unrelated to college size (factor loading +.04). Table 11 has two parts. The first part shows effects of a high status school climate on academic occupational choices and the second part shows the effects on professional (i.e., non-academic) occupational choices. Students are classified by sex, ability, and in each sub-table the appropriate freshman occupational choice. The proportions making each type of occupational choices as seniors are shown. The appropriate comparisons, of course, are within each row in the table - between those students in colleges of high average social status and those colleges of low social status.

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*It should be noted here that the inclusion of those few students who originally made academic choices would in no way affect the general conclusions we reach in this section.

Table 11

A. Students with Non-Academic Freshman Choices Only: Senior Academic Occupational Choice by Sex, Ability, and the Social Status of the Students of the School

(cell entries are % choosing academic occupations as seniors)

		Social Status of the School	
	Ability	High	Low
Male	High	29% (68)	25% (24)
	Medium	30% (44)	10% (50)
	Low	16% (38)	10% (83)
Female	High	20% (45)	14% (71)
	Medium	6% (54)	8% (83)
	Low	9% (45)	6% (101)

B. Men Only: Senior Professional Occupational Choices by Freshman Choice, Ability Index Score, and the Social Status of the Students of the School

(cell entries are % choosing professional occupations as seniors)

		Social Status of the School	
Ability	Freshman Occupational Choice	High	Low
High	Professional	67% (36)	50% (14)*
	Other	14% (50)	25% (20)
Medium	Professional	63% (24)	59% (29)
	Other	19% (31)	13% (30)
Low	Professional	50% (12)*	65% (37)
	Other	6% (31)	7% (59)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

* Percentage based on fewer than 15 cases.

Table 11 shows practically no consistent effects on either academic or professional occupational choices. There may be some suggestion in the top half of the table (Table 11A) that students in high status schools are more likely to shift to academic aspirations, but the differences are too small and inconsistent to take seriously. The bottom half of the table shows no consistent effects of school status on professional occupational choices at all.*

Table 12 shows the effects of another college quality indicator which has little relationship to college size and complexity - the proportion of applying students who are not admitted, or selectivity. We look for the effects of this indicator as further evidence about the overall effect of college quality on student occupational choice independent of school size (its factor loading on school size is -.10).

Table 12

A. Students with Non-Academic Freshman Choices Only: Senior Academic Occupational Choice by Sex, Ability, and Selectivity of the School

(cell entries are % choosing academic occupations as seniors)

		Selectivity of the School	
	Ability	High (admits 45% or less of applicants)	Low (admits over 45% of applicants)
Male	High	24% (59)	38% (32)
	Medium	17% (41)	13% (53)
	Low	7% (45)	14% (76)
Female	High	27% (30)	13% (76)
	Medium	15% (27)	6% (100)
	Low	11% (27)	7% (106)

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*College average expenditure per student - a variable similar to (and related to) school social status - shows no consistent effects at all on either type of occupational choice. See Appendix Table A-6.

Table 12 (continued)

B. Men Only: Senior Professional Occupational Choices by Freshman Choice, Ability Index Score, and Selectivity of the School

(cell entries are % choosing professional occupations as seniors)

		Selectivity of the School	
Ability	Freshman Occupational Choice	High (admits 45% or less of applicants)	Low (admits over 45% of applicants)
High	Professional	66% (32)	59% (17)
	Other	17% (42)	18% (28)
Medium	Professional	62% (26)	59% (27)
	Other	13% (24)	19% (37)
Low	Professional	70% (20)	55% (29)
	Other	7% (29)	7% (60)

Note: Students who made no occupational choice as freshman and/or as seniors are excluded from the table.

Again, a comparison across the rows in Table 12 shows that college selectivity has no consistent effects on either academic or professional occupational choices. Neither selective nor unselective schools appear to systematically increase the choices of students of given sex, ability, and freshman choice.*

We turn now to an examination of the effects of an indicator of college quality which does have a substantial relationship with size and complexity (factor loading -.27) - the faculty-student ratio of the school. Table 13 shows the effects of this variable on academic and on professional occupational choices.

For the first time in our analysis, Table 13 suggests some positive results. Part A of the table shows that students in colleges with higher faculty-student ratios are a little more likely than other students to move to academic occupational choices. This is clearest for female students, but slight differences in the same direction show up in two of the three male ability groupings.

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*College average verbal S.A.T. scores also show little effect. See Appendix Table A-7.

Table 13

A. Students with Non-Academic Freshman Choices Only: Senior Academic Occupational Choice by Sex, Ability, and Faculty-Student Ratio of the School

(cell entries are % choosing academic occupations as seniors)

		Faculty-Student Ratio	
	Ability	High (1/13 and over)	Low (1/14 and below)
Male	High	26% (61)	32% (31)
	Medium	17% (36)	14% (57)
	Low	13% (47)	11% (74)
Female	High	24% (66)	6% (50)
	Medium	13% (68)	1% (68)
	Low	13% (71)	1% (75)

B. Men Only: Senior Professional Occupational Choices by Freshman Choice, Ability Index Score, and Faculty-Student Ratio of the School

(cell entries are % choosing professional occupations as seniors)

		Faculty-Student Ratio	
Ability	Freshman Occupational Choice	High (1/13 and over)	Low (1/14 and below)
High	Professional	62% (34)	63% (16)
	Other	17% (47)	17% (23)
Medium	Professional	43% (21)	74% (31)
	Other	9% (23)	21% (38)
Low	Professional	53% (19)	67% (30)
	Other	8% (38)	6% (52)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

The second part of Table 13 shows a reverse effect on professional occupational choices. Men in schools with high faculty-student ratios are somewhat less likely to end up with professional occupational choices. Definite results appear in three rows of the table, but the other three show essentially no effects.

The data begin to suggest, then, a systematic, though small, college effect. We could argue that this effect shows the supportive impact that schools of high quality have - by providing students with close faculty contact and encouragement - on academic aspirations in particular. This argument would, in a general way, correspond to a traditional theme developed in the literature on the school effects problem. This theme stresses the importance of close contact with good teachers in developing high (or, sometimes, academic) aspirations in students (Knapp; 1952, 1953).

However, the data in Table 13 do not simply suggest a process by which schools which provide closer faculty contact encourage high academic aspirations more. The gains which academic occupations receive in such schools occur, not at the cost of all other occupations, but as the data in the bottom half of the table (13B) show, come essentially from high status professional occupational choices. Why should the presence of encouraging and supportive faculty contacts decrease the likelihood that students will choose professional occupations? It is very difficult to see Table 13 as showing a slight overall supportive effect on occupational aspirations for this reason. And it is correspondingly difficult to see it as reflecting a generalizable effect on school resources or quality for the same reason.

However, there is another reason why it is difficult to see Table 13 as showing a positive effect on school quality. The other indicators of school quality which we have examined in Tables 11 and 12 show no such effect.* If the presence of many opportunities to relate to faculty members supports academic aspirations, why should not contact with more able peers (in more selective schools) or peers with higher social status produce similar effects? And why does the level of training of the faculty (i.e., proportion with doctorates) show no similar supportive effect?

It seems quite possible that the slight effects shown in Table 13 are really due to the operation of another variable - school size and complexity. High faculty-student ratios are more common in smaller schools, and their effects may be due to this association, rather than to their connection with school quality.

Table 14 examines directly the effects of school size on academic and professional occupational choices. School size, it should be remembered, is unrelated to a number of indicators of quality, while it is positively related to some and negatively to others. Overall, it does not show a clear relationship, positive or negative, with what we may call a general school quality factor.

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*See also Appendix Table A-8, which shows that the level of faculty training also appears to have no effect on student occupational choices. Library size, a similar variable, also shows no effect. See Appendix Table A-9.

Table 14

A. Students with Non-Academic Freshman Choices Only: Senior Academic Occupational Choice by Sex, Ability, and School Size

(cell entries are % choosing academic occupations as seniors)

		Size of School	
	Ability	Large (1,000 and over)	Small (under 1,000)
Male	High	22% (59)	39% (33)
	Medium	14% (59)	17% (35)
	Low	7% (73)	19% (48)
Female	High	14% (50)	18% (66)
	Medium	3% (65)	11% (72)
	Low	10% (51)	5% (95)

B. Men Only: Senior Professional Occupational Choices by Freshman Choice, Ability Index Score, and School Size

(cell entries are % choosing professional occupations as seniors)

		Size of School	
Ability	Freshman Occupational Choice	Large (1,000 and over)	Small (under 1,000)
High	Professional	69% (32)	50% (18)
	Other	19% (36)	15% (34)
Medium	Professional	68% (34)	47% (19)
	Other	20% (41)	10% (20)
Low	Professional	70% (30)	47% (19)
	Other	6% (50)	8% (40)

Note: Students who made no occupational choices as freshmen and/or as seniors are excluded from the table.

Table 14 shows clearly that school size indeed does affect occupational choices. The findings in the top half of the table show that students in small schools are more likely to shift to academic occupations than students in large schools. The data in the bottom half of the table show that men in small schools are likely to remain away or to shift away from the professional occupational choices more than students in large schools. Thus, we find data which appear to confirm some of the findings of the early empirical literature on this problem. The studies of Knapp and his associates (1962, 1963) suggested that unusual numbers of academics appeared to be coming from undergraduate training in small - often midwestern - colleges. Our data show a clear-cut finding of just the same sort. We can speculate about the characteristics of colleges closely associated with school size or organizational complexity which might produce this result. In doing so we must bear in mind that there is no overall effect of school size on levels of student aspiration. Neither small nor large schools appear, as the previous section indicates, to lead students to aspire to occupations higher in the class structure. It rather appears that small and large schools tend to encourage students to move into two different parts of the great American professional upper middle class. Small schools tend to lead students into occupations rooted in the college social structure - college teaching, scientific work, research, and so on. Large schools tend to steer students into the established professions - medicine, law, engineering, etc. It makes no sense, then, to speak of large or small schools as raising or lowering aspirations in general. We must rather inquire what characteristics of large and small schools might be associated with different sectors of the occupational structure.

We can suggest one line of interpretation here: small schools clearly bring students into closer contact with teachers who are, after all, academics. At the same time, such schools may to some extent isolate students directly or indirectly from other elites in the social structure. Small schools are by definition unlikely to have associated professional schools or to have close organizational links with such schools. Students may be less likely to see their education as occurring in a formalized academic structure which could certify their entry into formal professional status. If it is true that small schools integrate students more closely with their teachers and at the same time separate them organizationally from the established professions the findings of Table 14 could be explained.

On the other hand, large schools, while perhaps reducing a student's individual contact with teachers, conversely relate him closely to the bureaucratized steps of the educational process. Such schools have pre-professional programs of a highly structured sort - they have professional schools associated with them providing further contacts and information. Whatever personal insecurity they may generate, it seems likely that they create in a student some sense of the formal security of his status and of the likelihood that successful occupancy of his status will lead by established rules into the occupational structure outside the world of the college (Meyer, 1970a). This line of interpretation gains some support from the findings of Kamens (1968) that students in large schools (a) are less likely to drop out of college than similar students in small schools, and (b) are less likely to be affected in decisions about whether to drop in or stay out of college by their grades; that is the internal academic rewards they receive. Kamens suggests as we do here that large schools provide a clearer social structure than small ones in interpreting the way the formal steps in the education of a student lead to a successful entry into the exterior occupational world.

The only data we can provide on these questions are in Table 15, which shows the effects on student occupational choices of the presence of graduate training at the college. This variable - which we consider a measure of organizational complexity - is so closely related to school size that their effects are inseparable in our analysis, and Table 15 can add only a little new information.

Table 15 shows exactly the same effects as Table 14. Schools with advanced graduate training are rather consistently less likely to develop academic aspirations in their undergraduates than other schools, and they are consistently more likely to develop professional aspirations. Since the colleges are distinguished into three categories, rather than two as in Table 14, the effects may seem a little larger, but this is not to be taken seriously. The important point is that Table 15 provides some additional support to the earlier findings.

Table 15

A. Students with Non-Academic Freshman Choices Only: Senior Academic Occupational Choice by Sex, Ability, and Availability of Graduate Training at the College

(cell entries are % choosing academic occupations as seniors)

		Graduate Training at the College		
	Ability	PhD	MA	None
Male	High	11% (35)	48% (27)	30% (30)
	Medium	12% (43)	12% (26)	24% (25)
	Low	7% (41)	3% (32)	21% (48)
Female	High	17% (23)	18% (39)	15% (54)
	Medium	3% (30)	0% (46)	15% (61)
	Low	10% (21)	8% (36)	6% (89)

Table 15 (continued)

B. Men Only: Senior Professional Occupational Choices by Freshman Choice, Ability Index Score, and Availability of Graduate Training at the College

(cell entries are % choosing professional occupations as seniors)

		Graduate Training at the College		
Ability	Freshman Occupational Choice	PhD	MA	None
High	Professional	68% (22)	73% (11)*	47% (17)
	Other	21% (24)	13% (23)	17% (23)
Medium	Professional	61% (28)	67% (12)*	54% (13)*
	Other	26% (27)	5% (19)	13% (15)
Low	Professional	59% (17)	86% (14)*	44% (18)
	Other	10% (29)	9% (23)	3% (38)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

* Percentage based on fewer than 15 cases.

Overall, it appears that the one general characteristic that appears to affect student occupational choices is school size and complexity. It operates not by stratifying students into occupations higher or lower in the status structure, but by allocating students into definite sectors of the upper middle class occupational world. Students in the small colleges tend to be sent into occupations related more closely to their college experience and students in large schools tend more to enter the established or "free" professions.

C. The Absence of Effects of College Quality on Occupational Choice: Colleges and the Stratification System: The most puzzling finding of the present study is that the enormous variations among American colleges in levels of resources - in faculty training and academic competence, in the amount of faculty time available to students, in academic facilities, and in the academic quality of the student body as a whole - seem to make no differences that we can discover in the social status of the occupations chosen by students with given individual characteristics. None of our indicators of college quality show any systematic effects on students' choices of higher or lower status professions.

This basic finding runs counter to two reasonable arguments which we have noted about the effects of college quality: (1) Those aspects of college quality which are especially related to the competitive standards of the school should lower the occupational aims of students by making it more difficult for any given student to obtain the kinds of grades, professorial time and approval, and other rewards, which encourage him to develop or retain high aspirations. (2) Those aspects of college quality which affect a student's education by providing the time and attention of qualified teachers, by defining his status as a student as a prestigious one in his own eyes and in the perspectives of peers, professional gatekeepers, and the wider community, should be found to encourage high occupational aspirations in given students. We find no evidence supporting either of these hypotheses.

It is possible that we have not considered indicators of college characteristics which capture precisely enough the competitive features of the environments of high quality colleges, on the one hand, and the supportive features which are separate (but correlated with them), on the other hand. Perhaps, if we had better indicators of college characteristics we would be able to distinguish some highly interrelated positive and negative effects of college quality which tend to mask each other (Meyer, 1970b). But it seems quite unlikely that the range of indicators of college quality which we have examined includes no single indicator which taps either of the processes for which we have been looking.

In the present section, we examine a possible line of argument which could provide a substantive explanation of our failure to show the expected set of connections between the stratified world of American higher education and the occupational class structure. We suggest that American students, while aware that the occupational structure can be seen as organized by stratified hierarchies of prestige, income, and so on, do not conceive of occupational choice as a choice made primarily on these dimensions. Occupational choice, rather, is seen by these students as reflecting personal interests, tastes, values, and unique capabilities. Choices made on these grounds, of course, are known by students to have consequences for the income, authority and prestige which may accrue to them, but such stratified attributes are not seen as the fundamental feature - particularly relevant to occupational choices - of occupations or of occupational choice.

We are calling attention to two related attributes of the American class structure, when considered in contrast to many other societies. (1) The occupational structure is seen as organized around many bases in a complex division of labor, not as primarily organized around the one-dimensional typology of a class structure. Thus individuals are conceived to be choosing occupations on many criteria, not simply or primarily that of maximizing their position in the class structure. (2) For this reason, the educational system in America is not seen as primarily operating to restrict entry into the class structure. Schools are not organized to force students out of given career lines (Turner, 1960), or to direct successful students into a few high-status career lines. In America, unlike many other societies, schools are not primarily defined as allocating people into the class (as opposed, for instance, to the occupational) structure. Thus, better and more successful students in schools of higher prestige and acknowledged quality are not under so great a pressure in America to select occupations at the very top of the status ladder. And less successful students in schools which are understood to be inferior are not automatically thought to have failed to achieve positions high in the stratification system. Nor is it thought to be the function of the school system to exclude such students from further educationed progress. Rather, there is an educational emphasis on attempts to help poor students succeed by providing further educational opportunities (Turner, 1960).

Not only does the American educational system underplay its relation to the class structure by blurring its occupational *gatekeeping* function through its unwillingness to definitively allocate success and failure, but it also underplays this relation by emphasizing its functionally specific - or vocational - training functions, rather than its broad, elite-forming, functions. Institutionalized in American education, in other words, is a conception of the occupational structure as pluralistic in character, rather than integrated around one central stratified variable. Thus schools try to allocate students into specific occupations, not to define them as appropriate or inappropriate for broad, class-related categories of occupations.

We do not have data which can even approach a proof that our argument is true - that the explanation for the lack of relation between the stratification system of colleges and that of the occupational world lies in the weakness of the American social conception of the latter as primarily a *stratified* order, especially in the higher levels of the occupational structure which we are considering. But we can provide some interesting evidence which suggests this perspective.

To begin with, it is clear that American students *are* oriented to grades as an evaluation system. Becker and his colleagues (1968) provide a detailed study of the importance grades play to students in organizing their efforts. American students use grades as a measure of their success *as students*. High school students use them as a means to decide on their appropriateness for college, and college students use them as indices of their appropriateness for further training. And in the internal world of the college, grades are used by students to define their success.

It is also true that a student's grades are affected, not only by his own ability, but by the ability of the other students with whom he is competing. Thus, students who find themselves in more selective schools end up with lower grades than they would have gotten had they attended less competitive schools (Davis, 1966). (For data at the high school level, see Bloom and Peters, 1961, and Meyer, 1970b.) Table 16 shows this effect with our data. Students are classified by their ability, as measured by our index. They are also classified by the selectivity of the college they are attending. The percentages in the table show the proportions of the students who receive grade averages of B- or better, according to the reports of the college registrar.

Table 16

Students' Grade Point Average as Reported by Registrar by Ability Index Score and Selectivity of School

(cell entries are % with overall grade point average of B- or better)

	Selectivity of the School	
Ability	High	Low
High	71% (140)	79% (136)
Medium	45% (87)	66% (162)
Low	32% (88)	41% (217)

Table 16 shows that students in each ability group are somewhat less likely to receive high grades if they are attending more selective colleges. The differences across the rows run between 8% and 21%.* This simple fact is, of course, one of the reasons why the argument about the negative, or "frog pond," effect of selective colleges has been developed in the literature (Davis, 1966; Meyer, 1965 and 1970b). And if students see their occupational choices as taking place in a stratification system which was tied to success in school, we can expect to find a negative effect of school selectivity on occupational choice.

Student occupational choices, however, are not taking place primarily in this way. Grades affect whether students stay in or drop our of college (Kamens, 1968), but even this effect is not large - only a small part of college dropout is attributable to grades. Similarly, the effects of college grades on student occupational decisions are surprisingly low. Table 17 shows the relevant data. Students are classified by their sex, ability level, and freshman occupational choice. They are also classified by their overall grade point average as reported by the registrar. The percentages having various occupational choices as seniors are shown. The table has three parts. The first analyzes academic occupational choices. The second part shows the results for professional occupational choices - excluding engineering. The third part of the table reports the results for engineers. Engineers are separated from other non-academic professionals in the table because engineering is an undergraduate discipline - it is reasonable to expect students to be able to become engineers even if they have mediocre grades, so long as these grades are obtained in the engineering curriculum itself.

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*These differences, of course, reflect the fact that colleges do not adjust their grading standards, or "curves," to take into account the abilities of their students. We found very little variance among colleges in the mean grade averages they reported for their students - in most cases the figure came very near B-. The variation which does exist, however, is slightly correlated with our school quality factor (loading =.14), indicating that there is some tendency on the part of colleges to adjust to their student bodies. This adjustment may have been accelerated by the difficulties in which colleges - especially high quality ones - have found themselves since 1966, when our final data was collected.

As in our previous analyses, the data in Table 17 are limited by the size of our sample. So for academic occupational choices, we report the results only for those students who did not have such choices as freshmen. And for the two types of non-academic professional occupations, we report the results for male students only.

Table 17

A. Students with Non-Academic Freshman Choices Only: Senior Academic Occupational Choice by Sex, Ability, and Grade Point Average as Reported by Registrar

(cell entries are % choosing academic occupations as seniors)

		Grade Point Average	
	Ability	B- and Above	C+ and Below
Male	High	34% (58)	23% (30)
	Medium	17% (48)	13% (40)
	Low	13% (32)	11% (81)
Female	High	14% (85)	18% (17)
	Medium	9% (80)	5% (38)
	Low	5% (65)	7% (70)

B. Men Only: Senior Professional Occupational Choices Excluding Engineers by Freshman Choice, Ability, and Grade Point Average as Reported by Registrar

(cell entries are % choosing professional occupations, except engineering, as seniors)

		Grade Point Average	
Ability	Freshman Occupational Choice	B- and Above	C+ and Below
High	Professional (excl. engineering)	72% (29)	33% (6)*
	All Others	9% (46)	6% (34)
Medium	Professional (excl. engineering)	58% (19)	60% (15)
	All Others	5% (39)	9% (32)
Low	Professional (excl. engineering)	64% (11)*	43% (14)*
	All Others	6% (33)	3% (73)

Table 17 (continued)

C. Men Only: Senior Engineering Occupational Choices
by Freshman Choice, Ability, and Grade Point Average
as Reported by Registrar

(cell entries are % choosing engineering as seniors)

Ability	Freshman Occupational Choice	Grade Point Average B- and Above	 C+ and Below
High	Engineering	38% (8)*	80% (5)*
	Other	0% (67)	11% (35)
Medium	Engineering	83% (6)*	50% (10)*
	Other	6% (52)	3% (37)
Low	Engineering	33% (3)*	81% (16)
	Other	0% (41)	1% (71)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

* Percentage based on fewer than 15 cases.

The data in Table 17 show the social process we are discussing. Senior occupational choices tend to be affected slightly by the college grades of the students, but the effects in no area are overwhelming. In engineering, we find no detectable effect at all. In considering the data, it is important to keep in mind the contrasting situation we might expect in a society in which students were clearly and commonly forced out of such occupational choices as these primarily or solely because they have mediocre grades. Table 17 does not show such a process. Grades have moderate effects on student decisions to move into, or remain in, the high-status occupational career lines we are considering, but they do not have an overwhelming affect. And many students of average ability and average grades retain high-status occupational choices, or develop them, during college.

A comparison of the three sub-tables of Table 17 shows a further fact. Student decisions are clearly related to grades only in the case of academic occupational choices. Their decisions to enter such professions as medicine and law - the most demanding and most elite occupations in our society - are less related to grades. That is, students are not most strongly affected by their grades in considering the most restrictive (in admissions standards) professions. They are most affected by their grades in their undergraduate majors when they are considering further work in occupations directly related to their studies - that is, in academic occupations. Engineers, who are almost universally intending to work outside academic activities, and who do not face further admission barriers, seem hardly to be affected at all.

This suggests that when students are affected by their grades, they are not using them as a general indicator of their overall stratificational situation, but as indicators of their own particular academic skills in relatively specific areas.

One final piece of evidence may be cited which suggests that to a considerable extent students, while valuing grades and understanding their social value or utility, do not see them as reflecting their general ability to work in a given area. The students were asked, as seniors, whether or not they felt they "have a flair for work in the area" of their academic major. (The question was suggested by Davis, 1966). Table 18 shows the relation between their answers to this question and the grades they report having received in their academic major. Overall ability level is held constant.

Table 18

Students Reporting a "Flair" for Work in Major Subjects as Seniors by Sex, Ability Index Score, and Grade Average in Major

(cell entries are % reporting having a "flair" for work in their major subject)

	Ability	High (B+ and Over)	Low (B and Below)
Male	High	85% (65)	72% (76)
	Medium	83% (40)	68% (78)
	Low	76% (37)	73% (116)
Female	High	93% (87)	68% (65)
	Medium	75% (48)	63% (99)
	Low	88% (40)	67% (107)

Table 18 shows that to a surprising extent students do not use their grades in their academic major to indicate their own ability in relation to this area. Only about 15% fewer of the students reporting lower grades indicate having a specific flair for the subject. Clearly most of the students are responding to other cues than grades. To some extent, they are assessing their grades in this area in relation to those they have received in other academic fields. But to some extent, it seems obvious, these students are deciding on their fitness for work in the area of their academic majors on the basis of other indicators than the formal evaluations of their work which they have received. Perhaps they are considering their degree of interest in the field, the amount of satisfaction they get from working in it, or other characteristics. We cannot be sure. But it is clear that the students are not accepting, as of general utility in choosing their ultimate position in the occupational structure, the ranked or stratified aspects of their performances.

Thus, we are arguing that our failure to find indications of a substantial "frog pond" effect may partly result from the low levels of effect which all sorts of competitive or stratified characteristics have on college students' occupational choices. Once having entered college- and in effect, the middle class occupational world - students may not be primarily oriented toward occupations as stratified. And even if they are, they may not see educational stratification, in the sense of grades as the major or primary basis on which to enter the occupational structure.

We have no evidence on the point, but a similar explanation may account for our failure to find positive effects of school quality attributes on high status occupational choices. Students and their reference groups certainly have some idea of the quality and prestige variations which obtain among American colleges. But these variations do not seem to relate to occupational choices in any substantial way. Again, as with the comparisons students make of their performance within colleges, this may result from the facts that (1) college students may not see occupational choices as choices to be made among objects which are in their most important respects ranked or stratified; and (2) even if they do see occupations as varying primarily in their social status, the students may not conceive of college quality or prestige as a primary factor which is relevant to stratified occupational decisions.

All the processes which we have discussed, of course, result from a fundamental fact about the American educational and occupational systems. Students are free to make occupational choices in a variety of different ways because these choices are not made for them by the institutional structure. An educational system oriented to defining success and failure, and possessing the power, by failing students on given examinations, to clearly rule out many high-status occupational choices, could create all sorts of institutional effects by clearly organizing possible occupational choices along stratified lines. Thus, if students in given types of colleges, or with given grades within colleges, were formally (perhaps legally) restricted from certain occupational choices, the kinds of school effects we are considering might be institutionally produced. Thus, in the final analysis, the fact that occupational choices appear to be made on other than stratificational grounds in America, may result from the fact that occupations, and the training curricula leading to them, are not organized institutionally in a clearly stratified way.

CHAPTER IV: CONCLUSIONS

In this study, we set out to discover the effects of college characteristics on certain fundamental aspects of student occupational choice. We wanted to see how college quality and size affect the social status of student occupational choices, and also to discover whether these school attributes affect the choice of high-status occupations closer to, or further from, the academic world. This study follows a series of investigations about the effects of school size and quality. Some studies see college quality as supporting high aspirations, while others see it as impeding such aspirations by providing excessive levels of competition. Similarly, some studies suggest that small schools support student aspirations. These lines of reasoning are particularly highly developed vis-a-vis academic occupations, presumably because a student's choice of one of these occupations is peculiarly affected by his academic experiences, and by the degree of support and encouragement, on the one hand, or competition, on the other, which he experiences. High quality schools are thought to create especially strong competitive pressures in regard to the selection of academic occupations. And small schools, it is suggested, especially support and encourage students' aspirations in these areas.

In this longitudinal study of the occupational choices of 946 college students in 99 American colleges, we find few contextual effects at all. Our findings can be summarized in four statements:

(1) College quality indicators show neither positive nor negative effects on the overall social status of the occupations selected by students, when individual background factors and freshmen occupational choices are taken into account.

(2) College size and complexity also appears to have no effect on changing the social status of the occupations selected by similar students.

(3) College quality measures show no systematic effects on shifting student occupational choices toward either academic or toward non-academic high-status professions.

(4) Large schools tend to shift student occupational choices toward high-status professional occupational choices and away from high-status academic occupations, while small schools have just the opposite effects.

The one area, that is, in which we find positive evidence of school effects, is in the choice of academic or professional occupations. Small schools appear, as the earliest research in this area suggests, to encourage students to move into occupations embodied in the structure of the college itself. Large schools seem to enable students to move through the formalized curricula and admissions processes leading to the established professions.

The major interpretive problem we now face is the explanation of the absence of stronger relationships between the social statuses students have within the educational system (i.e., success within schools; and prestige or quality of school between schools) and the social status of the occupational position they choose. Occupational choice is not enough affected by student grades to be subject to a negative effect of school quality (on the grounds that grades are harder to achieve for a given student in a highly competitive school). And apparently variations in school prestige and quality are not meaningful enough to students to lead to a positive effect of school quality on occupational aspirations.

We are left with the suspicion that the lack of institutionalization of clear stratificational differences among the kinds of occupations which American college students choose leads these students to conceive of their choices as reflecting specific interests, tastes and capabilities rather than a generalized level either of aspiration or of success or failure. And we are left with the further possibility that even if students do conceive of their occupational choices as fundamentally involving a decision about stratification, they do not conceive of the educational system's criteria of success or failure (whether school quality or individual grades) as sufficiently binding on the world outside the school to dominate their decisions.

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APPENDIX A: REFERENCE TABLES

Table A-1

A. Senior Academic Occupational Choices According to Freshman Choice and Ability Index Score

(Cell entries are % choosing academic occupations as seniors)

	Ability Index Score:		
	High	Medium	Low
Freshman Occupational Choice:			
Academic	64% (47)	38% (29)	40% (25)
Other*	22% (211)	10% (234)	9% (269)

B. Senior Professional Occupational Choices According to Freshman Choice and Ability Index Score

(Cell entries are % choosing professional occupations as seniors)

	Ability Index Score:		
	High	Medium	Low
Freshman Occupational Choice:			
Professional	54% (61)	56% (62)	57% (53)
Other*	8% (197)	5% (200)	5% (241)

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*In this table and in the following ones, students who gave no freshman and/or senior occupational choice are excluded.

Table A-2

Social Status of Senior Occupational Choice by Sex, Ability, Freshman Choice, and School Expediture per Student

(Cell entries are % choosing high status occupations as seniors)

			School Expenditure per Student**			
	Ability:	Freshman Choice:	Large ($2300 and over)		Small (Less than $2300)	
Male	High	High Status	83%	(64)	67%	(12)*
		Other	64%	(33)	57%	(7)*
	Medium	High Status	70%	(53)	76%	(17)
		Other	42%	(19)	19%	(21)
	Low	High Status	74%	(34)	64%	(33)
		Other	18%	(38)	16%	(31)
Female	High	High Status	61%	(18)	45%	(11)*
		Other	28%	(50)	10%	(52)
	Medium	High Status	38%	(8)*	25%	(8)
		Other	11%	(61)	3%	(65)
	Low	High Status	20%	(5)*	40%	(5)*
		Other	7%	(61)	10%	(80)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

*Percentage based on fewer than 15 cases.

**Source: see Table 4

Table A-3

Social Status of Senior Occupational Choice by Sex, Ability, Freshman Choice, and College Average Verbal S.A.T. Score

(Cell entries are % choosing high status occupations as seniors)

			College Average S.A.T. Score**	
	Ability	Freshman Choice	High (500-800)	Low (200-499)
Male	High	High Status	80% (65)	82% (11)*
		Other	65% (34)	57% (7)*
	Medium	High Status	67% (49)	83% (23)
		Other	33% (21)	29% (17)
	Low	High Status	68% (25)	70% (40)
		Other	21% (24)	17% (48)
Female	High	High Status	48% (21)	75% (8)*
		Other	22% (65)	14% (36)
	Medium	High Status	17% (6)*	33% (9)*
		Other	12% (52)	1% (69)
	Low	High Status	40% (5)*	20% (5)*
		Other	9% (44)	10% (93)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

*Percentage based on fewer than 15 cases.

**Source: see Table 4

Table A-4

Social Status of Senior Occupational Choice by Sex, Ability, Freshman Choice, and Library Size

(Cell entries are % choosing high status occupations as seniors)

			School Library Size**	
	Ability	Freshman Choice	Large (150,000 vols. or more)	Small (less than 150,000 vols.)
Male	High	High Status	81% (52)	77% (26)
		Other	61% (31)	64% (11)*
	Medium	High Status	74% (46)	70% (27)
		Other	45% (22)	11% (19)
	Low	High Status	81% (26)	61% (41)
		Other	15% (26)	20% (46)
Female	High	High Status	62% (13)*	50% (16)
		Other	19% (27)	18% (78)
	Medium	High Status	50% (2)*	29% (14)*
		Other	3% (31)	8% (98)
	Low	High Status	0% (1)*	33% (9)*
		Other	13% (24)	8% (118)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

*Percentage based on fewer than 15 cases.

**Source: see Table 4

Table A-5

Social Status of Senior Occupational Choice by Sex, Ability, Freshman Choice, and Availability of Graduate Training at the College

(Cell entries are % choosing high status occupations as seniors)

			Graduate Training at the College**		
	Ability	Freshman Choice	PhD	MA only	None
Male	High	High Status	76%(33)	83%(18)	81%(27)
		Other	46%(13)*	81%(16)	54%(13)*
	Medium	High Status	70%(40)	71%(17)	81%(16)
		Other	40%(15)	21%(14)*	25%(12)*
	Low	High Status	64%(22)	84%(19)	62%(26)
		Other	21%(24)	6%(18)	23%(30)
Female	High	High Status	60%(10)*	50%(6)*	54%(13)*
		Other	16%(19)	14%(35)	22%(51)
	Medium	High Status	50%(2)*	20%(5)*	33%(9)*
		Other	35%(29)	0%(44)	14%(56)
	Low	High Status	0%(1)*	50%(2)*	29%(7)*
		Other	10%(21)	11%(35)	8%(86)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

*Percentage based on fewer than 15 cases.

**Source: see Table 4

Table A-6

A. Students with Non-Academic Freshman Choices Only: Senior Academic Occupational Choice by Sex, Ability, and Expenditure per Student

(Cell entries are % choosing academic occupations as seniors)

	Ability	Expenditure per Student	
		Large ($2300 and over)	Small (less than $2300)
Male	High	28% (75)	33% (15)
	Medium	16% (55)	11% (35)
	Low	11% (61)	11% (57)
Female	High	24% (58)	9% (55)
	Medium	12% (66)	3% (68)
	Low	5% (64)	7% (81)

B. Men Only: Senior Professional Occupational Choices by Freshman Choice, Ability Index Score, and Expenditure per Student

(Cell entries are % choosing professional occupations as seniors)

Ability	Freshman Occupational Choice	Expenditure per Student	
		Large ($2300 and over)	Small (less than $2300)
High	Professional	62% (42)	63% (8)*
	Other	18% (55)	9% (11)*
Medium	Professional	61% (36)	57% (14)*
	Other	17% (36)	17% (24)
Low	Professional	57% (23)	65% (26)
	Other	10% (49)	3% (38)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

*Percentage based on fewer than 15 cases.

Table A-7

A. Students with Non-Academic Freshman Choices Only: Senior Academic Choices by Sex, Ability Score, and College Average S.A.T. Score (Verbal)

(Cell entries are % choosing academic occupations as seniors)

		College Average S.A.T. Score	
	Ability	High (500-800)	Low (200-499)
Male	High	25% (76)	54% (13)*
	Medium	18% (57)	12% (33)
	Low	15% (39)	10% (80)
Female	High	20% (76)	11% (36)
	Medium	11% (54)	1% (74)
	Low	11% (47)	5% (94)

B. For Males Only: Senior Professional Choices by Freshman Choice, Ability, and College Average S.A.T. Score

(Cell entries are % choosing professional occupations as seniors)

		College Average S.A.T. Score	
Ability	Freshman Choice	High (500-800)	Low (200-499)
High	Professional	67% (42)	33% (6)*
	Other	18% (57)	17% (12)*
Medium	Professional	53% (36)	75% (16)
	Other	15% (34)	21% (24)
Low	Professional	53% (15)	66% (32)
	Other	6% (34)	7% (56)

Note: Students who made no occupational choices as freshmen and/or as seniors are excluded from the table.

*Percentage based on fewer than 15 cases.

Table A-8

A. Students with Non-Academic Freshman Choices Only: Senior Academic Occupational Choice by Sex, Ability, and Percent of Faculty with Doctorates

(Cell entries are % choosing academic occupations as seniors)

		% of Faculty with Doctorates	
	Ability	High (over 40%)	Low (40% and below)
Male	High	29% (73)	25% (16)
	Medium	15% (48)	13% (40)
	Low	13% (52)	9% (68)
Female	High	25% (36)	13% (76)
	Medium	5% (41)	9% (92)
	Low	3% (31)	7% (114)

B. Men Only: Senior Professional Occupational Choices by Freshman Choice, Ability Index Score, and Percent of Faculty with Doctorates

(Cell entries are % choosing professional occupations as seniors)

		% of Faculty with Doctorates	
Ability	Freshman Occupational Choice	High (over 40%)	Low (40% and below)
High	Professional	62% (39)	56% (9)*
	Other	15% (52)	27% (15)
Medium	Professional	62% (29)	60% (20)
	Other	19% (36)	13% (23)
Low	Professional	52% (21)	68% (28)
	Other	10% (42)	4% (47)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.

*Percentage based on fewer than 15 cases.

Table A-9

A. Students with Non-Academic Freshman Choices Only: Senior Academic Occupational Choice by Sex, Ability, and Library Size

(Cell entries are % choosing academic occupations as seniors)

		Library Size	
	Ability	Large	Small
Male	High	27% (66)	31% (26)
	Medium	21% (52)	7% (42)
	Low	9% (46)	13% (75)
Female	High	21% (33)	14% (83)
	Medium	3% (32)	9% (105)
	Low	8% (24)	7% (122)

B. Men Only: Senior Professional Occupational Choices by Freshman Choice, Ability, and Library Size

(Cell entries are % choosing professional occupations as seniors)

		Library Size	
Ability	Freshman Occupational Choice	Large	Small
High	Professional	66% (35)	53% (15)
	Other	15% (48)	23% (22)
Medium	Professional	60% (30)	61% (23)
	Other	21% (38)	9% (23)
Low	Professional	65% (20)	59% (29)
	Other	9% (32)	5% (58)

Note: Students who made no occupational choice as freshmen and/or as seniors are excluded from the table.